

MICHIGAN FARMER.

Devoted to Agriculture, Horticulture and Science.

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THE WOOL MARKET.

Although a large amount of Wool has changed
hands in Michigan since our October issue, the
prices have not varied materially, remaining at
about the same figure as at that time. Many are
satisfied with 70 or 75 cents and are closing out,
while others who have plenty of storage room
and can afford to wait, still hold a large quantity
for higher prices.

Large shipments have been made on the Michi-
gan Central, Michigan Southern and Detroit and
Milwaukee Railroads, from different parts of the
State, and are making their way to the Eastern
markets, and we think full two-thirds of the pro-
duct of our State (5,500,000lbs.) is disposed of,
leaving, we should estimate, over 2,500,000 still
remain on hand.

We do not remember of having seen so much
Wool passing through Detroit at any period, as
within the past three weeks. This will no doubt
have a tendency to affect the New York and Bos-
ton markets, as the manufacturers having a good
supply on hand will be less eager to buy for the
next sixty days. This temporary lull will, un-
questionably be seized upon by speculators to cry
down Wool, in order that 3 or 5c. per pound may be
knocked off to enable them to buy and "hold on"
for another rise and increased activity in demand;
but the readers of the *Michigan Farmer* who have
not sold their Wool must not be misled, as their
product will sell at a fair advance on the present
ruling prices at any time up to March, 1864.

During the present month there has been one
of the fullest attended auction sales in New York
City—(among the purchasers we notice some of
the most extensive manufacturers and prominent
dealers,) ever held. Good prices ruled through-
out in both Domestic and Foreign, and the lots
went off readily, showing that what we have pre-
dicted for months past "That manufacturers must
have the Wool, and pay a fair price for it," has
been fully substantiated, the *N. Y. Economist*, *Ohio
Wool-Grower*, &c., to the contrary, notwithstand-
ing—the former seems in much tribulation about
"W. S. B., the writer of the Wool articles in the
Michigan Farmer," for further particulars we re-

fer that journal to the resolutions of the Illinois Woolgrowers Convention, and many minor meetings—"Let the galled jade wince."

The prices throughout Michigan rule as follows.

Albion,	- - - -	70a75c per lb.
Jonesville,	- - - -	65a70c. "
St. Johns,	- - - -	60a65c. "
Marshall,	- - - -	60a70c. "
Downiac,	- - - -	65a68c. "
Three Rivers,	- - - -	60a70c. "
Ann Arbor,	- - - -	68a72c. "
Niles,	- - - -	65a70c. "
Buchanan,	- - - -	50a70c. "
Cassopolis,	- - - -	60a65c. "
Romeo,	- - - -	70a75c. "

Prices in Detroit range as follows:

Merino, pure grade, extra clean,	70a75c.
do mixed do in good order,	65a70c.
Canada long clean Fleece,	58a62c.

THE NEW YORK MARKET.

The market has been more quiet than the last week in consequence of buyers awaiting the result of the large auction sale, held on Thursday last. The sale was largely attended by manufacturers and others, and has given a much more cheerful tone to the market. Holders are generally asking prices above the views of buyers, which limits transactions. The fact that woolen goods are in great demand gives manufacturers confidence in making purchases at the recent advance. The consumption of Shirting flannels has increased immensely within the past year, and the prospect is that woolen shirts will hereafter become a regular staple in the market. The sales include 160,000 lbs. Fleece, 70a82c.; 50,000 lbs. pulled, 72a73c. for Lamb; 3,500 lbs. English pulled on private terms 1,000 lbs. Provence 32c.; 600 bales Cape, 40a40c.; 30,000 lbs. Constantine; 30,000 lbs. African on private terms; 850 bales of Smyrna 54 1-2, besides several other parcels.—The market at the extreme close was decidedly firmer.—*Economist*.

Walter Brown's circular for Nov. 1st, says:—

"Since the first of October there has been great activity in the domestic Wool trade.

In the early part of the month a movement began in the producing districts; and Wools have since changed hands with a steadily increasing demand at higher prices, until a rise of nearly or quite ten cents per pound has been established, and a large portion of the clip has passed into the hands of growers to dealers and manufacturers.

The stock in market being light it was soon taken up by consumers and speculators, leaving prices to be regulated by fresh receipts; and at the close of the month our figures stood relatively as high as in most parts of the West.

Should no special cause intervene to disturb the current of trade, the Eastern markets must rule at figures sufficiently above the range of the present high rates of the West to pay the shipper a profit over the cost of transportation and the expense of sales; and if gold, cotton, and other staple commodities should continue to advance as many predict, we cannot see why the highest prices of last winter may not be realized.

We reported the following sales during the past month:

In New York, Fleeces, 1,645,000 lbs., 60a85c.;—Pulled, 470,000, 59 1-2a80c.; 150,000 lbs. California, 37 1-2a52 1-2c.

In Boston, 2,903,000 lbs. Fleeces and Pulled, at 60a85c.; 6000 lbs. California, 36c.

In Philadelphia, 1,143,000 lbs. Fleeces and Pulled, 67a70c."

BOSTON MARKET.

The transactions in domestic wool show a considerable falling off compared with some previous weeks, but add up more than an average business. So far as prices are concerned the market is as firm and buoyant as previously noticed, with a decided upward tendency, and unless something should turn up not now looked for or anticipated, it is believed that the extreme prices of last year will be realized. Our stocks of domestic and desirable grades of foreign have not been so small at this season for a number of years, and the balance of the clip is now being bought up at extreme figures. About six months of the wool year has now passed away and the manufacturers have nearly cleared the market of all available supplies of foreign, besides taking the bulk of our domestic clip. How the demand is to be met for the next six months if the same average consumption continues, and the indications now that it will be increased, rather than diminished, remains to be seen. At our present stand point, a firm and gradually advanced market is looked for. The sales for the week have been 370,000 lbs fleece and pulled, comprising one small lot of 7,000 lbs. coarse and heavy Wisconsin fleece at 80c.; and the balance at 75a85c. as to quality.—And several small lots of choice Ohio, Pennsylvania, and Western Virginia at 85c. per lb. Some lots of fine fleece are not now offered under 87c. per lb. Pulled wool ranges from 75a90c. for super and extra, as to quality.

The state of the Boston market is a good stand point for the farmers of Michigan to judge from, as New England has a larger wool consuming interest than any other portion of the Union, and as this market necessity prompts so in a great measure will the prices be affected, it is well, therefore to thoroughly understand how wool is moving in that locality.—W. S. B.

THE AGRICULTURAL COLLEGE.

The closing exercises of the Agricultural College at Lansing, occurring during the present month, we took the occasion as the proper time to pay the institution a visit, and to take a glance at its progress its improvements, and its purchases of live stock, of which we had heard much said, and which was noticed in the October number of the *Farmer*.

The examination of the students was highly satisfactory, and show that the College is at last worked into the direction it was intended it should have, when it was founded.

The examination of the junior class, in the departments of chemistry and zoology, exemplified more fully than any other to observers, the practical system of tuition which has been initiated and is now practiced. The examination in chemistry closed with the last lecture of a series given by Dr. Kedzie to the Students, and which summed up the results of certain experiments that had been planned and carried on during the term.

These experiments consisted in the application of muck in several forms to grass, potatoes, corn, and other crops, in the continued observation upon the growth of the crops, and of the plants, their value by actual measurement. These experiments were conducted in all their details by the junior class, the professor explaining to the class by lecture and tuition in the Laboratory, the nature and qualities of the material with which they worked. For instance, a partial trial was made of the effect of muck alone upon grass growing on a dry, gravelly sand soil, and a comparison was made of the growth with a part of the same field on which no muck was applied, and also on a part on which a top-dressing of manure was applied. The muck had been taken from the marsh the winter before, and had been exposed. In the application of muck to corn, the rows were counted, and hills on each row; the muck, we believe, was applied here by itself, and as a compost with night soil, salt plaster, and ashes, each applied in definite quantities. The nature of the soil was first explained to the students, the components pointed out in which it was deficient, the composition of each article used as manure was explained and taught; they were applied in definite quantities, and the results composed in a definite manner. In the case of the muck, where it had been compared with night soil, it was found that the marsh muck completely absorbed all the disagreeable odors of the night soil. The compost was made by laying down a thick stratum of the muck, and then emptying the cleaning of the vaults on the muck in a proportion two of muck to one of night-soil. The heap when made was left for a period of two or three months, and then the

whole was turned over with the shovel. This turning was done twice, and proved to be light, and no more disagreeable than shoveling an ordinary ash heap. Of this compost half a shovelful was applied to each hill, and its effect was to make a gain on the crop of corn where applied, of 125 per cent. over the crop grown where no manure or other dressing was applied. An application in the hill of a top dressing of salt was proved to effect an increase of the crop equal to 90 per cent. On potatoes the result was of the same nature. In measuring the crop, definite weights were used, and not baskets, or basketfull, as it was shown that between baskets of either corn or potatoes, that looked seemingly alike in quantity, there would be a difference of from three to ten pounds. We cannot speak more definitely of these experiments at present, but we learned that they would be published in connection with the report of the Board of Agriculture, in such form as will exhibit them most usefully. It must be noted that these experiments are but the first of a series, which to be generally useful, must cover a number of seasons, during which the effects of the composts, the muck deposits of the State and the use of the several articles of plaster, ash, and salt as top-dressing will be studied under the various conditions of our climate and subjected to various tests. These experiments will form a part of the practical education of the College as they will be conducted by the students themselves.

We have referred more particularly to this department and its experiments as exemplifying the system now in operation more fully than any other. The same system, however, prevails throughout. In the department of Zoology and Animal Physiology, under the charge of Professor Miles, the whole anatomy and structure of the domestic animals are taught practically and thoroughly. Their consumption of food, and its comparative value, are also made studies with which the students are made familiar. Experimental tuition in this department cannot be profitably undertaken till further progress has been made with the complete organization of the working part of the establishment.

The Botanical Department is connected with Horticultural, under the charge of Mr. A. N. Prentiss. Very great progress has been made in getting the grounds, supplied with specimens of such trees, shrubs, and plants, as are suitable for open air culture in the latitude of Lansing; and the tuition, so far has been as perfect as the nature of the study would permit; but until green houses and propagating-houses are erected, this study cannot be as fully and thoroughly taught by direct practice, as is desirable.

The concluding exercises of the students took

place on Wednesday evening, and were attended by a large number of visitors from Lansing and the country around. The members of the Board of Agriculture were present, viz: Hon. H. G. Wells, Kalamazoo, Acting President; Justus Gage Dowagiac; David Carpenter, Blissfield; A. C. Prutzman, Three Rivers; A. S. Welch, Ypsilanti; The exercises were conducted in the chapel of the College, and were varied with music by an excellent brass band from the city of Lansing. Wellman A. Hardy, of Meridian, discussed the subject of "Historic Fancies"; David Howell, of Macon, spoke of "Ambition"; Sylvester M. Millard, of Victor, "The World's Progress"; Lewis Vanderbilt, of Memphis, "Agricultural Education"; W. W. Daniels, of Wacousta, had "A Contrast"; Jas. H. Wellings, of Dewitt, "Fort Sumter"; and Lewis J. Gibson, of Meridian, described the life of "George Stephenson, the Engineer." The whole concluded with a benediction by the Hon. Justus Gage.

Throughout the whole of these addresses and compositions, we noticed a healthy and vigorous tone of thought, and a lofty patriotism, that convinced a strong devotion to country, unblinded by sophistic quibble, and sound in its sense of right and its perception of wrong.

The whole number of Students who have been in attendance during the past year is sixty, and the Faculty comprises The President of the College, T. C. Abbott, who is Professor of History and English Literature, but whose eminent ability and acquaintance with the science of education, renders him admirably adapted to the position of presiding officer over the College, where many unsettled and complicated questions are constantly arising. Professor Manly Miles, who is Professor of Zoological and Animal Physiology, and who also has, during the greater part of the term, had the chief superintendence of the farm; E. C. Kedzie, Professor of Chemistry; C. A. Kenniston, Instructor of the Preparatory Class; A. N. Prentiss, Instructor in Botany and Horticulture, and Superintendent of the Gardens; and Oscar Clute, Instructor in Pure and applied Mathematics. There has been no Superintendent of the farm during the greater part of the term, Mr. J. B. Tibbitts having resigned that position last summer. F. S. Stebbins is Seward of the Boarding Hall, and Clark A. Noble is the foreman of the work on the farm.

THE IMPROVEMENTS ON THE FARM.

The work during the past two years has consisted chiefly in cultivating, remodeling and bringing into thorough condition for farm purposes, the lands off which the timber had been previously cleared, much of which was in a rough state.

The estate, which consists of 670 acres of land through the northern section of which flows the Cedar River, had never been laid out upon any plan, nor had any plan ever been authorized or adopted previous to the coming in of the Board. One of the first duties incident, therefore, as the organization of a plan which should be matured from year to year, and which every change of fence, and every clearing of the surface, every part of ditch and drain, every planting of a tree, every piece of new road, should tend to perfect. Before any such plan could be adopted, the new Board required time not only to make themselves acquainted with all the resources of this institution, but also to look round, and endeavor to secure the requisite aid. This work alone took up nearly the past two years, and yet as much was done as could possibly be expected. All that portion of the land lying north of the Cedar River, and on which are the College buildings, has been laid out, and most

of the fences moved so as to divide it off into fields of regular form, leaving, however, ample grounds for ornamental and horticultural purposes. The garden has been much extended, and its surface soil and subsoil has been examined. The surface soil was known to be somewhat cold and hungry sand; the examination to some depth below, disclosed the fact that the sand was underlain by a bed of raw and stiff clay, which, rising towards the edges of the bank towards the river, held the water as in a basin, and rendered the soil damp, cold and late. Under the superintendence of A. N. Prentiss, this has been remedied by a series of tile drains, which have been laid during the past fall. On the side hill, and on the grounds which formerly were the old brick yard, and which were much cut up by holes and hollows from which clay had been taken, an orchard for pears has been planned. The surface has been leveled as much as possible, or as was necessary, the whole plowed and sown with clover, which was turned in by a heavy plowing, and the subsoil plow used, so as to stir the whole surface soil to the depth of sixteen to eighteen inches. A series of tile drains are now being put down, which will thoroughly drain the orchard. All the surveys, as we understand it, as well as the calculations and plans of the drains and orchard form a part of the work and studies of the students.

On the north side of the river there are altogether about one hundred acres cleared, most of which has been laid down to grass, and part is now growing wheat. The whole tract runs south from the river as a half section and it is the design to lay it out in regular fields of twenty to twenty-five acres each, with a road running through the centre, from which each field shall be approached. The design is also to clear and perfect each lot year by year as the labor will permit. At the present time to the north side of the river, as the land on that side has been the roughest and most difficult to reduce.

Preparations are being made to add additional sheds to the barnyard. The new large barn is well adapted to the wants of the farm at present, and, together with the old brick barn, which has had a new roof given to it, there is sufficient accommodation till the stock on the farm largely increases.

THE IMPROVED STOCK.

No attempts had been made to introduce the improved stock in the farm beyond the purchase of a few Berkshire and Suffolk swine, previous to the past year, when the Board authorized Professor Miles to visit the principal herds of Shorthorns and Devons, for the purpose of selecting and purchasing, within a limited amount such animals as would lay the foundation of herds of these two breeds, which is principally used in this State for purposes of crossing. In pursuance of these directions, Professor Miles selected and purchased three head of Shorthorn stock and three head of Devons. These animals consist of a bull and two heifers of the Devon stock. As the State is interested in this stock, a description of it will be very proper here.

The bull is named FATALIST, and was purchased from the herd of Samuel Thorne, Esq., of Thornedale, New York, and it is not improper to acknowledge here the very great liberality which has distinguished this gentleman in this purchase. No such bull with such pedigree, quality and perfection of points and of the same age, has ever been sold out of the Thornedale herd for less than \$800 to \$1000, and in the purchase of this animal it may be considered that he bestowed on the College in the purchase fully \$500. In proof of this we have only to cite the fact that the "Second Duke of Thornedale," the sire of Fatalist, was sent to England in 1861, when he was three years old, and was sold there for \$9000. Fatalist is light roan, and is form is the best Shorthorn bull in the State, without question. He was two years old on the 19th of February last, and consequently is not by any means fully developed, but promises to be large. In the points most difficult to perfect in the short horns, he is almost a model, and we have never seen him excelled in back, loin and hind quarter, while his arm, shoulder, chest, neck and head are very superior. His body presents the true massive squareness of the short horn, and his descent proves that these qualities are all bred unto him. His sire was the 2d Duke of Thornedale, a bull bred by Samuel Thorne, of New York, and by him exported to England, with a number of others, to supply the demand for stock of the very choicest

Duchess blood. He was bred from imported 3d Grand Duke, bred by the Earl of Duce, and purchased at a cost of \$3,000, and out of Duchess 1st, a cow sired by the famous Duke of Gloster, imported by L. G. Morris, and out of the famous Duchess 6th, one of the choicest cows of short-horn blood ever bred in England. The dam of Fatalist is Favaria, a cow by imported Neptune, a bull well known by reputation to all short horn breeders as of the highest breed family, and out of Frederica, a cow imported by Mr. Thorne, after winning in England the first prize at the annual show of the Royal Agricultural Society, the first prize at the great Yorkshire show of the same year; the first prize at the Royal Agricultural Society of Ireland and the first prize, the next year, as the best heifer in the yard of the exhibition of the Royal Agricultural Society of Dublin.

The two heifers purchased are from other herds, the oldest is named DIELYTRA GWYNNE, and is of the well-known Gwynne-tithe of short horns. She comes from the herd of John R. Page, of Bennett, New York, and is by the Bull Hiawatha, of young Balco blood, and out of Dinah Gwynne, by Balco. This heifer has a very strong cross of the Gwynne blood, Hiawatha being out of Dinah Gwynne. She is of good size, and a bright red in color. We are sorry to state that she lost her calf since she arrived on the college farm.

The youngest heifer "Haze," was calved March, 1862, and is from the herd of F. Rotch, of Morris, Otsego county, New York, and belongs to the Oxford tribe of short horns, a family nearly as celebrated as the Duchesses. Lord Oxford, the sire of Haze, is another of those bulls that Mr. Thorne sent to England, and which was sold by him in that country for \$2,000, after winning the challenge cup at Ulverton, being himself a son of the Duke of Gloster, and out of Oxford 13th, by the 8d Duke of York. Oxford 13th, was a cow of the most direct descent from the famous Oxfords, and Malchams, with a cross from Bates' Duke of Northumberland. The dam of Haze, is Honeyuckle, by Tommy Bates, a bull sired by imported Lord of Eryholme, and out of Oxford 5th, indicating, that Haze ought to possess the Oxford stain of blood in very strong proportion. She is a fine heifer, being now a yearling of good size and a rich roan color.

Another Short-horn heifer of very promising quality is EMELINE. This heifer was presented to the College by James B. Crippen Esq., of Coldwater, late President of the State Agricultural Society. Emeline was bred from Sarah Chambers, a short-horn cow that has been awarded several premiums at our State Fairs, and is by Wellington, by Third Grand Duke, who brings in by his dam Eugenie the Grand Turk blood, and a strong strain of the Duchess title. Emeline is a deep red roan, with a magnificent coat, and quite a thoroughbred look about her. The gift to the College was a noble one.

The Devon Stock consists of a bull and two heifers. The bull, CHEROKEE, was bred by Edward G. Falle, of West Farina, and, in quality, is one of the very finest animals of that stock that has been brought into the State, and is closely related to the best bred families. His sire is Powhattan, by imported Exeter, a bull bred by the celebrated Mr. Quarterly. The dam of Cherokee is Bowley, also imported, and bred by George Turner, of Boston, near Exeter, England. This animal gives evidence of high breeding, and will exhibit what first class Devons will do in this State.

The heifer Zulieka is a two year old, by Huron, by Exeter out of Victoria, a cow bred by James Quarterly, of Molland, England. The dam of Zulieka was Zulieka, by Exeter, out of Plata, by Wellington, a bull imported by Ambrose Stevens, of New York, from the Quarterly tribe.

The youngest heifer of this stock is EVELEEN, a Devon heifer 7 year old, and probably the very finest bred animal of the kind in the State, and we think it would be difficult to excel her in any herd for fineness and elegance. This heifer is by Cayuga, one of the very best bred Devon bulls in the United States, every direct male ancestor being a winner of first premiums either in this country or in England. The dam of Cayuga was Bowley, named above. The dam of Eveleen is imported. Eveleen by Earl of Exeter who took the first premium at the Royal Agricultural Show, at Windsor, in 1852.

Use of Salt in the Food of Cattle.

The following are extracts from a recent prize essay on common salt, by Dr. Phipson, of England:

The use of salt in the food of cattle must not be looked upon as a direct producer of flesh, so much as a necessary element of the economy, without which animals are apt to perish from disease, but with which the body is kept in a normal and healthy state. Not many years ago a German agriculturist, Uberacker, brought forward an experiment which is in direct accordance with this opinion. Wishing to obtain some exact notion of the influence which salt exercised upon his sheep, the flocks of which lived upon a low, damp pasture-land, and received habitually a certain dose of salt, he fixed upon ten sheep, and struck off their usual allowance of salt. This remarkable experiment was continued for three years, with the following results:—In the first year five of the ten died of rot and worms; in this year the remainder of the flock, 450 head, lost only four sheep. The second year a new lot of ten sheep, deprived of salt, lost seven individuals; the remainder of the flock, 364 head, lost five only; a little later, the other three died also from diarrhoea. The third year was very rainy.—Sixteen sheep were selected, and deprived of salt. The whole of them died in the course of the year of rot and vermicular pneumonia.

In the Brazils and Columbia, flocks may be annihilated by being deprived of salt. M. Garriotte, member of the Agricultural Society of Lyons, assures us that the milk of cows subjected to a daily allowance of salt is richer in butter and cheese than when these same cows are deprived of salt.

Sir John Sinclair, to whom agriculture owes much useful information, has observed that the habitual use of salt has a marked influence in improving the quantity and the quality of the wool of sheep.

Many English agriculturists have proved, by direct experiments, that a regular distribution of salt to cattle is especially useful in preventing hoove (meteorization), caused by feeding cattle with leguminous vegetables. And there exists no doubt among those who have tried it, that when employed in proper quantity, it increases the appetite, stimulates digestion, keeps up the normal supply of salt in the blood, improves the wool or hair of the cattle, prevents disease, and, moreover, enables the agriculturist to fatten cattle upon food which they would not enjoy without it were previously mixed up with salt.

But there is another important consideration with regard to the regular distribution of salt to cattle: namely, its influence in preventing disease. Its daily use becomes of serious consequence when

flocks and herds are menaced with those epidemic attacks which too frequently ravages a whole country at once, when a proper use of salt would either prevent them entirely, or at least reduce them to less disastrous proportions. During one of these epidemics, which sprang up about the year 1840, in the East of Europe, the almost wild cattle of the Ukraine, Podolia and Hungary, were struck down in much greater numbers than those of Silesia and Bohemia, where the cattle-breeders habitually distribute salt to their beasts. Advancing towards the West, this scourge diminished in intensity, and finally ceased to show itself in Germany, where particular care is bestowed upon cattle, and where salt has been for many years constantly employed.

In Great Britain, in the best farmed districts, we find the allowance of salt oscillating around the subjoined figures, taken as a center of basis:—

ALLOWANCE OF SALT PER DIEM.

Calf, six months old	1 ounce
Bullock or cow, one year old	3 "
Oxen, fattening	6 "
Milch cow	4 "

HORSES.—It is generally admitted, wherever salt forms habitually a portion of the horse's diet, that this animal simply repays the slight additional expense or trouble thus incurred. To mix salt with the food of the horse, colt, ass or mule, is a frequent practice in England and America. In these countries the usual allowance for a full-grown horse of middle height, is about 2 ounces per diem. In Belgium, the quantity of salt appropriated to a full-grown horse by the Government is little more than 1 ounce per diem.

SHEEP.—The Romans gave to their flocks of sheep, every fifth day, an allowance of salt amounting to about half an ounce per head; and this is precisely the quantity which is still employed in England and Saxony daily, for sheep full-grown and of ordinary size. Numerous experiments have proved that salt is more beneficial to sheep than to any species of cattle.

PIGS.—The best proportion to adopt as a basis appears to be about two-thirds of an ounce per diem for full-grown pigs.

In administering salt, unless it be used as medicine, the more intimately it is mixed with the food, the better. This is not an easy matter with fodder, especially that which has been salted to preserve it, in which case we must endeavor to make a rough estimate of the amount of salt in a given weight of fodder, in order not to administer an injurious excess. In farms where oil or rape-seed is given in powder, this being rather an indigestible food, the allowance of salt should be mixed with it, in preference to any other fodder. It should be borne in mind that an excess of salt is injurious to any animal; and that is why

the preceding figures are given as a kind of practical guide. An excess of salt produces irritation and inflammation of the mucous membrane, and causes several kinds of skin disease, especially in sheep. With horses an excess of salt has been known to produce dysentery; and in oxen diseases of the blood. Salt should never be given to cattle when a deficiency of food does not enable them to receive abundance of nourishment; in which case we excite appetite without satisfying it, and the animals lose flesh rapidly. Salt is to be prohibited, also, wherever congestion of any important organ is observed, or where we have perceived inflammation of the bowels. In such cases we must not guided by the instinct of the animals themselves.

In some diseases of the digestive organs salt has proved beneficial. Thus, in cases of rot in the liver, accompanied by loss of appetite, paleness of the membrane, swellings under the throat, avoid ground which communicates the rot, and give the sheep five grains of iodine and half an ounce of the spirits of turpentine twice a day, and let them have free access to salt. And again, for the disease called "red water," a species of dropsy, give liberal supplies of food, a dry resting place and rocksalt.

Considered as a medicine, salt purges animals at the following doses:—

Horses	8 to 10 ounces.
Oxen	10 to 15 "
Sheep	2 to 3 "
Pigs	2 to 3 "
Dogs	1 to 2 "

It becomes a poison at the following doses:—

Horses	2 lb.
Oxen	3 lb.
Sheep	6 to 8 ounce
Pigs	4 to 6 "

MUCK.

There is a great deal of muck in the country; almost every farm has it in some form. And there it lies, a bed of manure. The reason why it lies there is, the people think they have not the time to take it away. We fear, however, a great many are too indolent. Still, more are ignorant, and know not the nature of muck. And there it lies for some future farmer to realize the benefit.

Has the reader; we mean the reader who is careless about muck; ever dug a ditch through a swamp? If he has, he must have noticed how mellow the dirt became that was thrown up; dirt that was, nothing but mud. We remember our first experience in this line when a boy, and how we admired the "ash-heap," as we termed it; mud in the fall when we dug the ditch, ashes the next summer, when we walked along the ditch, with clear water running through it, where before was only a swamp, and where the Timothy and red-top showed a ridge of black, tall grass

that surprised us. The Timothy was not on the mellow ridge, but along its border, where it acted like manure. We were a boy and saw this. It was our first lesson in muck as a manure. And since then we have seen the untold benefit of this manure, ready-made—but, oh! how neglected. We say ready-made, that is, if it is taken out of its bed and exposed to the sun; for the sun, as well as the frost, has a mighty influence in the world. The sun gives us all our growth of vegetation, and it equally prepares our soil for us, if we only give it a change. Muck, in its bed, is wet, and cold and sour. It is known how water preserves wood, for hundreds, even thousands, of years. Now muck contains the woody fibre of plants and other substances, and these are preserved from year to year, and century to century, each year's growth forming a layer of this fibre. As soon as this bed is thrown up to the sun and frost, decomposition begins—i. e. the mass begins to rot; and, when rotted, you have manure; no sooner.

It will take years to rot some kinds of muck; some will not sooner. Do we, then, have to wait so long? Happily we can say, No. We have the means. Lime, you know, is the great decomposer. It is thrown in privies, on barn-yards, and on fields. Well, lime mixed with muck, will hasten its rotting. Ashes also have a good effect. Mix these with the muck after the sun and frost have had their effect upon it; for it is difficult to mix it when in a crude state, when first thrown up.

Add to a load of muck, say as much as a good pair of horses can draw, a bushel of (unleached) ashes, a peck or more of (unslacked) lime. This will rot your muck and sweeten it, and prepare it for whatever use you may want it; for your corn-ground, but particularly for a top-dressing to old meadows that are running out. The ashes and lime in the muck are particularly for grass—are indispensable—to say nothing of the manure, which is the principal part.

There are various ways of treating muck. Some draw it into the barn-yard; some use it in the stable. In such cases it takes up the strength of the dung of the stables and barn-yard. It is a powerful absorbent. In a hog-pen it is most excellent, keeping a dry pen and adding wonderfully to the amount of rich manure, as the hog-pen contains manure of the richest quality. Some cart it out and make a compost heap, where they mix the ingredients with it, and use the compost afterward as the want it. Some cart it on the field, spread it, and mix the ingredients there. But, remember, the sun must always do the thing. There is no getting away from that. The sun and air must have access to manures, or

the manures will be of no benefit. Hence, if manures are plowed under deep, unless the soil is dark and gravelly so as to heat it through, it will be of little benefit. Slightly plowed under, with thorough sub-soiling, is the the thing, unless your manure is fully prepared and rotted beforehand, as the case with compost heaps. Then, for deep-rooting vegetables, plow under deep, if the soil will admit. For slight-rooting grains plow shallow.

If it is too much trouble to treat your muck in the way we have mentioned, then merely throw it out of its bed, and spread it somewhat, so that the elements can readily get at it, stirring it now and then if not thin enough spread, and leave it there for several years. There apply. But it is much better to mix, as the ingredients mixed in are fertilizers, as well as agents, thus acting in a double capacity, which they could not when not mixed.

Thus it will be seen how easy it is to treat this important fertilizer (muck). There are still other modes of treatment and other ingredients added; but these are of less consequence and somewhat uncertain. Lime is the grand thing for muck in general, and ashes will greatly assist, particularly when applied to worn out meadows or pastures, as grass contains a great amount of potash. Cart out your muck then. It will also help to drain your land which, otherwise, is wholly useless.—*Valley Farmer.*

"MIDLAND CITY SENTINEL."—This well conducted journal is published by Carpenter & Bailey, and is the pioneer sheet of one of the most promising counties in the State (possessing almost unbounded water privileges and many other inducements to settlers) and deserves the support of every man in Midland, who should feel it his duty to support his home press. Nothing so much enlightens the people abroad as to the desirability of a comparatively little known locality, as a good local newspaper, and such is the *Sentinel*; therefore let all endeavor to give it that whole-souled support that it so substantially deserves.

BLOODED SHEEP.—Mr. S. H. Gage, recently imported from Oakland county to his farm, near this village, two French Merino Bucks, for which he paid the round sum of \$50 each. The wool-growing business in Clinton county is fast becoming its greatest mine of wealth.—*Clinton Republican.*

LARGE APPLE.—We have to thank Mrs. Edward Jones, of Riley, for a most beautiful sweet apple, from a three year old tree, which measures 13 1-2 inches round, and which weighs 14 ounces. We were unable to learn the name, but it resembles very much the Spice Sweeting, though larger and better.—*St. Johns Democrat.*

OPINIONS OF THE STATE PRESS.

Our subscribers will observe that the *Michigan Farmer* is winning golden opinions from all parts of the State:—

MICHIGAN FARMER.—The October number of this valuable journal is received, containing, as usual, matters of the utmost interest to farmers, and also to every household. It is the organ of the State Agricultural Society, and not only the best Agricultural Journal published in the State, but one the best in the world! The present number contains a full list of premiums at the late State Fair, together with an account of the several County Fairs. Indeed, it should be taken by every farmer who has any taste or interest in farming well, as it teaches both, besides other interesting matters. Published by William S. Bond and George Snyder, Detroit, Mich.—*Midland City Sentinel*.

WE have received the *Michigan Farmer* for August. Every farmer in this State should subscribe for it. It is a home agricultural journal, published for the benefit of Michigan farmers, and as such should be supported by them in preference to anterior publications in distant States. The *Farmer* is published by men who are practically acquainted with the wants of the farming community in Michigan, and has good contributors in all parts of the State. It contains nearly 50 pages of reading matter, and one number is worth to farmers in this State more than six of any Eastern publication of the kind. Published monthly by Bond & Snyder, at Detroit. Terms only one dollar per year.—*Huron Co., News*.

MICHIGAN FARMER.—This farmers' monthly for October has at last made its appearance. Their delay this month is owing to their publishing the entire premium list of the State Fair, which appears fully corrected. This alone will make it worth the price of subscription to any farmer in Michigan. Send \$1 to the publishers, Bond & Snyder, Detroit, Mich., and receive in return your own State agricultural journal for one year.—*Buchanan Co., Union*.

THE MICHIGAN FARMER.—The last number of the *Farmer* is received. To the Farmers of Michigan, we would say by all means patronize your home Journal. It is worthy and its instructions and treatises are adopted to the climate of the State. A new volume has just commenced.—*Barry County Pioneer*.

HOW TO KILL THE PEACH GRUB.—An effectual remedy, and which will do the business up at once, is—take a sharp pointed knife and follow up the insect till you find him, and then destroy him. This is the only certain remedy. Once done, and the thing is secure.

Fruit at the State Fair.

Never since our remembrance has there been so large a display of fine fruit as there was at the State Fair of 1863. The tent used was hardly large enough to accommodate the full and numerous entries. New tables and shelves were added at all points, and still there was hardly space enough, as it continued to arrive profusely up to the third day of the exhibition, and some were obliged to display their specimens on the grass. The Eastern portion of the State was fully represented by many of its most prominent and successful horticulturists and nurserymen, among whom we noticed Messrs. Adair, Hubbard & Davis and J. W. Humphrey. These gentlemen carried off a host of premiums from under the canvass, Mr. Wm. Adair taking premiums on the greatest collection of Pears, and also the best autumn varieties—Mr. Adair pays great attention to this special kind of fruit, having some 50,000 dwarf and standard Pear trees for sale. Hubbard & Davis took prizes on 12 specimens of autumn Apples, one on summer pears, and nearly all the native and foreign varieties of Grapes which they cultivate most successfully, probably having one of the largest and best collections in the State. Mr. J. W. Humphrey, took a decided lead in the amateur display, and carried off the premium for the best collection of fruit in that list—in Apples, he carried off no less than four good premiums. Mr. B. Hathaway, of Little Prairie Ronde, lead the Western part of the State on substantial fruit, having secured three 1st premiums and two second premiums on different collections of Apples. There were many other exhibitors who entered fine fruits, who we are not able to particularize, both amateur and professional, making in all one of the fullest displays ever exhibited in Michigan. The whole was presided over by T. T. Lyon, Esq., who had reason to be proud of the success that attended a branch which he has done so much to improve and build up.—W. S. B.

COTTONIZED FLAX.—Some beautiful specimens of cottonized flax have been sent to the Agricultural Department at Washington, by manufacturers in different parts of the country. It is stated that the samples have a fine gloss, that its texture is stronger than ordinary cotton, and that mixed with wool, it can be wrought into elegant and durable fabrics for ladies' dresses, men's wear, and the various uses to which cotton is applied. It can be manufactured and sold at 10 cents per pound and yield a fair profit, and some manufacturers are even sanguine that it can be sold at 8 cents per pound. Cottonized flax now bids fair to become an important branch of national industry.

AN AGRICULTURAL BOOK WORTH OWNING.

The Messrs. Appleton, of New York, have recently issued, in very neat form, an English translation of Liebig's *Natural Laws of Husbandry*, a work that ought to be in the hands of every agriculturist, as containing the perfected conclusions of the highest authority upon the science of farming. It is well known that some twenty-three years ago Prof. Liebig published his researches upon chemistry applied to Agriculture and Physiology, in answer to the resolutions of the Royal Agricultural Society of England, and from that moment, the whole position of agriculture as a science became more elevated, and seemed to take a new place in the esteem of professional men. Since then experiments and researches of the most profound interest to agriculturists have been made in every country in Europe. The number of men educated in the several departments of the natural sciences who have applied their minds, while associations and societies have placed the means at their command to investigate the processes by which nature elaborates plants, animals and man from the dust of the earth, is astonishing. Few can comprehend the immense impetus which Liebig gave to agricultural research and inquiry without be acquainted somewhat with the condition of the whole science previous to the time when the work above referred to appeared. The standard works on agricultural science in any language were easily counted, while the principles inculcated by them were little known and less understood; since the publication of Liebig's first work, the books published in every division of agricultural inquiry are no longer to be numbered by hundreds, but by thousands, whilst their teachings have been brought into practice more or less in every part of Europe, and to some extent in this country. In the "*Natural Laws of Husbandry*," which we have to notice now, Professor Liebig sums up the results of his labors, reduces them to laws or general rules, and enunciates them in such a manner as to instruct the reader. Liebig begins with the plant, and exhibits how it grows, and especially indicates its dependence on the composition of the soil for its perfect development. The Plant requires a definite measure in proportion of certain mineral or unorganized substances to perfect its organization; if any one of these substances be absent, it cannot grow; if any one of these substances be present in only a small proportion, the plant is developed or is grown only to such an extent as that single substance may be present. For instance, if a crop of wheat needs a soil composed of seven substances, in certain ascertained proportions and the

supply of one of the substances is less than the amount needed for the full development of the plant, no supply or increase of any, or all of the other six substances, will supply what the plant requires, and it will only grow to the perfection that the minimum supply of the one substance will permit. This is the foundation of "Liebig's Mineral theory," as it is termed, and which is opposed by those who argue that the plant derives a large portion of its substance and growth from the atmosphere, from light, and from other sources independent of the soil. The soil is next discussed, and is divided into the arable surface soil and subsoil. In this division of the work which occupies the second chapter; the nature and the composition of the soil is very fully discussed, and is followed by the action of the soil on the food of plants as supplied by manure. The chapters on manures, their application and action, their qualities, the methods of using them, and on what principle they should be used, are of the highest interest to the farmer, and contain a fund of information, which is invaluable. The book is for sale by Wm. B. Howe, Jefferson avenue, Detroit.

PULVERIZATION OF THE SOIL.

The following very interesting communication upon this most important economy in farming, is from a writer in the Germantown Telegraph, and is well worth perusal. Most farmers are well aware of the excellent effects resulting from a thorough pulverization of the soil before sowing or planting their seed. It was the opinion of the celebrated Jethro Tull, that good crops might be produced from a soil for an indefinite period, simply by maintaining the earth in a finely pulverised state, thereby facilitating the expansion of the roots in every direction, in quest of food; and notwithstanding the fallacy of his deductions, so far as regards the mere efficacy of pulverization without the assistance of other physical means, no one can doubt the very great, I had almost said indispensable, necessity of thoroughly comminuting the soil we intend to crop. A very considerable proportion of the actually available fertility of every soil, is derived from the atmosphere, by which it becomes impregnated or imbued with fructifying gases, the legitimate action of which, under certain circumstances and the laws of a well-balanced economy, are so indispensable in the primary development and final maturation of the plant. That such is the case easily demonstrated by the rapid acquirement of the fertilising principles by soil taken from great depths, and exposed on the surface where the action of the atmosphere is uninterrupted, and which occurs in the case of sand

thrown from cellars and wells. In a few seasons such earth becomes covered with a dense and luxuriant vegetation, even when no effort has been made on the part of man to assist or forestall the operations of nature. The results in part from the absorption of fertilising gases, and from the solution of soluble silicates, under the action of certain agents of a strictly atmospheric character. It is frequently remarked by practical agriculturists, that soil thrown from ditches, cellars, wells and other deep excavations, becomes, in a few years, remarkably prolific under cultivation; and this is what might reasonably be expected, as the soil in its primitive position was below the range of vegetation, and consequently its soluble silicates have never been exhausted by supporting vegetable life; but on being brought to the surface, exposed to the pulverulent action of the plow and the chemical and mechanical action of the atmosphere, they become immediately available, and exert a most potent and beneficial influence upon crops of every description, and for a considerable length of time.

Of the many substances imbibed by the soil, the most important as well as valuable, perhaps, so far as regards its action on living plants, is ammoniacal gas, and which being copiously involved wherever large quantities of animal manures are used, or permitted to ferment and decompose in a free atmosphere, is greedily absorbed by the soil. But the capacity of the soil to absorb this principle is always in a direct ratio to its fineness, its porosity, and the minute disintegration of the granules of which it is composed. If the surface is solid, or presents large isolated lumps, or if it is compactly and finely trodden, the absorption is slow and slight. The more thoroughly, therefore, we stir and mix the soil, the copious, of course, will be the influx of fecundating matters from the air, and the more permeable will be the soil to the roots of the plants by which it is to be taken up. No soil that has not been recently broken up, can be worked too much, for the more we plow and harrow, the more certain shall we be of a crop.

In gardens the effects of thorough pulverization are more favorable and obviously evinced, than in field culture, where less attention and labor are bestowed. One great reason, probably, why so many failures are experienced from the non-germination of the smaller kinds of seeds, is to be found in the very imperfect manner in which the soil is prepared for their reception. The minuteness of many seeds almost invariably insures their destruction, if sown in soil of a coarse quality.

The moisture contained in the earth insures the germination of the seed, but the last circumstance of the fluidified pabulum, or aqueous re-

sources of the medium, after this process has commenced, and before the development of the plumule and rootlet has sufficiently progressed to either enter deeply below its primary position, or to extend above the surface, proves almost immediately fatal, the nascent plant withers, and if it does not actually die, it experiences a stultification and emasculation of energy, which it never wholly recovers, and remains sickly and dwarfed till its death. Let any person who is at all skeptical concerning the correctness of this doctrine, submit it at once to the ordeal experiment, and he will find the reasonings herein advanced, amply corroborated by the result.

Although the utmost degree of pulverization which it is possible to secure, will not insure fertility to a radically poor soil, without the assistance and conjoint action of other accessories, yet it will be found to augment the productive capacities of the richest and most fertile lands. Soils reduced to great fineness, are also much more easily tilled and managed, than those of coarser texture; manure acts with greater energy upon them, and the crops are always more forward and less liable to blight, mildew and rust.

Putting up Potatoes.—This is the season of the year for digging and storing potatoes, and the importance of this staple product will justify more care than is usually bestowed upon its preservation, as an article of food in the family.

Potatoes should be taken from the ground only in fair weather, and not left exposed to the sun and wind, longer than is necessary.

In handling, care should be taken, not to bruise the surface or break the skin. It is a common error that a potato will stand all manner of ill usage and be none the worse for it. Orchardists know that if an apple is bruised in the gathering, it is not fit for winter keeping; in like manner farmers should know that for table use the potato needs the same careful handling, to ensure the best results. A potatoe that is bruised or chafed, or is subjected to a water bath after leaving the ground, is materially injured for winter keeping; a potatoe of the finer varieties, such as Neshamock, Peachblow, Kidney, Mercer, Lady's finger, etc., when grown upon suitable soil, properly harvested and cooked right, is a positive delicacy upon the table; but take the same lot, let them be roughly handled, chafed, immersed in water, and laid by in that ruined and undone condition for a few weeks, and then cooked, even tolerably well, and they are not a very inviting dish. When the potatoe crop of Ireland failed, that people were confronted with starvation, little do we Americans realize how much suffering of the poor, and

positive inconvenience to the rich, would be caused by a failure of the potatoe crop in this country. The potatoe is both bread and meat in many households, and deserves all the consideration of a prime staple, as well as a luxury, in human food.

Potatoes for table use, should not be stored at all in a wet cellar. In such a place their starch is hydrogenized, thereby spoiling their finest quality for food; they become soggy, and will never cook dry or mealv. For the same reason, where potatoes are to be stored in heaps out of doors and covered with earth, avoid placing them on any other than land which is naturally dry and where water will not stand. On sandy land potatoes will keep very well in heaps, if properly covered from the winter rains and secured from frost.

Cellar storage is most common among farmers, and most convenient for household purposes; but the cellar should be dry. If the potatoes are free from disease, they may be stored in close bins with the tops covered with dry sand or loam, which will ensure perfect preservation. Potatoes which are tainted with rot must have their sore spots dried up by exposure to the dry atmosphere and a dust of slaked lime. Such potatoes are not fit for human food, and should only be used under protest in case of dire necessity.

In the storage of large quantities of potatoes for stock use, say in the barn cellars, it is well to use a dust of lime. We saw a good example of this practice in the barn cellars of the famous old agriculturist, James Gowan, of Germantown, near Philadelphia, last fall. Mr. Gowan feeds largely of roots to his stock in winter; his ample stone-walled cellars were heaped with potatoes and other roots, all in the nicest order. Before putting in the stock of roots for winter, Mr. G. has the walls and paved floors nicely cleaned and sprinkled with lime dust, and as the potatoes are wheeled in, other dustings are administered, by which all foul vapors are avoided and the place is free from noisome atmosphere usually encountered where vegetables are stored in any quantity.

SMALL BIRDS.—One of the curious questions which are debated very solemnly in the *London Times* and other English papers in what is called "the small bird question," viz.: is it right to kill small birds; are they not, in fact, the destroyers of noxious insects, and in this way providential benefactors? A country parson, in a late number of the *Times*, complains that his plum buds were destroyed by the bullfinches, and his strawberries eaten up by the blackbirds; the raspberries were similarly treated by the thrushes and robins, and finally he has saved but half a crop of his best pears in consequence of the misconduct of these "little rascals," assisted by an arrival of titmouses. The parson wishes to know whether he can shoot or not.

Education of Farmers.

We propose, in a free and easy way, to express some of our views on this important subject.—And we respectfully ask our brethren of the plow to give the considerations we shall present, their candid and earnest attention. Our pen may, in this discussion, run on to the length of several successive numbers. We promise to keep within the bounds of propriety as we understand them, and to say nothing that shall do our friends any hurt. We may amuse, if we do no other good—we shall try to do more! Will our readers do us the favor—and it may be a favor to them also, to walk along with us in this discussion, and hear what we have to say.

The first and leading idea, in the word Education, is to draw out the powers of the mind, and thus invigorate them—give them form and shape, and ability for accomplishing any mental labor to which the mind may be called. The business of education is therefore, properly, not to impart a knowledge of facts, but to teach men to think, to investigate, to reason. A man may treasure up facts on any and every subject, till his mind becomes a perfect storehouse of materials for thought and investigation, and yet be a perfect baby in real useful knowledge, because his facts are unclassified, undigested, and therefore unavailable. He is like a man who should gather up tools of every art, profession, and business, and lay them in a promiscuous heap, or scatter them around without order or system. He has the tools to work with, but they are useless, for he never knows where to find them, whether they are in order, or how to use them. For all practical, useful ends, he might as well be without them.

A man possessed of such a storehouse of facts, may astonish the ignorant, with what seems to them marvellous displays of learning, while his mind is a perfect chaos of ambiguity, uncertainty and error. He makes a good story teller, but a worthless reasoner.

This discipline of mind—which is almost the sum total of education, without which, most of what is called education is nearly useless—amounts to just nothing at all.

These remarks apply not merely to farmers, but to every body. They are as true of one class as of another. That man can be most useful, to himself or others, in any profession or business, who has most of this discipline of mind. But let us not be misunderstood. We do not say a farmer should spend all his time in the study of books—or half of it. He cannot do it, unless he is able to live and carry on his business without much personal labor. But he must learn to think. He must study nature as well as books. He must not be,

"The wretch who holds it here, so think.

Who loves no music but the dollar's clink.

Who, gazing where Niagara's torrents thrill.

Exclaims, 'Oh, what a stream to turn a mill!'

He must love nature, study her, and learn from her; and the "almighty" dollar, must not be the highest object of his worship. We shall recur to this subject again. *Grand Haven Union.*

Making and Keeping Cider.

Cider on the farm is a democratic drink, not so much used as it was forty years ago, but more used now than it was a dozen or more years ago, when it was thought to be a forerunner of something worse, by initiating a taste for ardent spirits. Many people still condemn the use of cider as a beverage, with whom we shall not argue the question upon its merits, but only say that those people who will drink cider, should try and secure an article of the best quality; for to our certain knowledge, there is a kind of cider made from good honest apples, but spoiled in handling, which is not fit for any human stomach, except in the shape of vinegar, while we do also aver that there may be cider which will give an agreeable flavor to the palate, and sit nicely upon an unperverted stomach.

The introduction of little portable cider mills has been a damage to the quality of the cider—not absolutely of necessity, but because the cider maker was tempted to press off his pomace as fast as it came from the mill. Cider-making, like cheese-making, is not entirely a mechanical process, but partakes largely of the chemical; and there is a nicety of chemical ripening in the pomace of the cider-maker, as well as in the curds of the dairyman.

Whatever mill is used for grinding apples to secure good cider, the pomace should not be pressed out under six hours after grinding; by keeping the whole together in this way, the free juice acts upon the more fixed aroma of the pulp, seeds and skins, so that when it is pressed out, it takes the soul of the fruit—so to speak—along with it; whereas, if pressed out as soon as ground the juice is thin, watery, and destitute of aroma and that peculiar fruity body, which makes good cider such a luxury.

The cider once pressed out, should be stored in casks absolutely clean and free from taint or mustiness. Musty casks, if to be used at all, should have something more than a rinsing of cold water. Let them be thoroughly soaked and scalded and then fumigated with brimstone. It is poor economy to put good cider in foul casks to be spoiled. Store the casks in the cellar, take out the bungs so the fermentation will work over and keep the casks filled so the fermented pomace will all go over and not settle as lees in the bot-

tom, to hasten a second fermentation and give you a premature hard cider. For a nice beverage, as soon as the vinous or first fermentation ceases, either rack off the liquid into clean casks or bottle it, and close the packages air tight. There are various devices of drugs and the like, for keeping cider sweet, but we prefer our cider as we do our wine free from all such mixtures.

Grinding and Cooking Corn.

The following statement made by the Shakers of Lebanon, N. Y., as to the relative value of ground and unground, cooked and uncooked corn for feeding and fattening hogs and cattle, we find in the Patent Office report.

The experience of more than thirty years leads us to estimate ground corn at one-third higher than unground as food for cattle, and especially for fattening pork; hence it has been the practice of our society for more than a quarter of a century, to grind all our provender. The same experience induces us to put a higher value upon cooked than upon raw meal; and for fattening animals, swine particularly, we consider three of cooked equal to four bushels of raw meal. Until within the last three or four years our society fattened annually, for thirty years, from forty to fifty thousand pounds of pork, exclusive of lard and offal fat; and it is a constant practice to cook the meal, for which purpose six or seven potash kettles are used.

Notwithstanding that there is abundance of testimony to the same effect, there are a great many farmers who are in the habit of practicing the wasteful method of feeding corn in the ear to hogs, horses, etc., or of feeding raw meal in fattening stock. The testimony above given, with much other like it, would certainly, if duly considered, put an end to such wasteful methods of feeding. Many would probably give up feeding raw meal, were it not that they find the cooking of it quite a troublesome process. To such we would suggest that there is an easy method, which is nearly as good as thorough cooking, and which consists in pouring boiling water on the meal that is to be fed twelve or twenty hours afterward. This plan we have adopted for years in feeding swine and milch cows, and in finishing and in finishing off the fattening of bevers, and are sure that meal thus prepared is worth twice as much as raw meal.

ROASTED APPLES.—A crack-brained correspondent of the London Morning Herald, if not considerably more than that, writing from New York on the 25th of August says: "It is the first time in six years that I have seen large quantities of roasted apples sold in the market. They are roasted on the trees by the heat of the sun [?], and then gathered and brought to the market. They sell at fifteen cents the peck roasted."

SURFACE MANURING.

The following article on surface manuring, by Mr. Bright, of Philadelphia, we copy from the *Gardener's Monthly*:

The agricultural circles are very much exercised at the present moment with the question, whether it is better to apply manure in a partial & rotted state upon the surface of the earth, weeks or months before they are required for crops, or to decompose them in heaps, and plough them in as soon as applied at planting time.

The best writers, both practical and theoretical, in England and America, seem to incline to the first mentioned practice, in reference particularly to grass and grain; and the best effects are shown to have resulted from this method of the application of surface manure.

The practice of top-dressing, or of surface manuring, has long been the favorite method employed by all intelligent gardeners within the circle of my acquaintance. We have long ago learned that masses of rich nitrogenous manures are not what plants require about their roots; but that manures are applied more successfully (and less injuriously) by top-dressing, either in solid or liquid form.

Nature never manures her plants with c-ide masses of concentrated fertilizing substances; but imparts her stimulating and mineral food in a state of the most minute division, (almost infinitesimal,) chiefly from the surface of the earth. No wonder so many fruit trees have been killed; so many fruit trees rendered barren by excess of wood, in consequence of the too heavy manuring at their roots so universally recommended by writers on gardening and horticulture.

The great objection to surface manuring it founded upon the probable loss of ammonia, caused by the exposure of decaying manures upon the surface of the earth. But this loss has been shown, by sound reasoning and by facts deduced from practical experience, to be much less than commonly apprehended while the benefits arising from surface-manuring, in other respects, more than counterbalance any possible loss of ammonia from this practice.

In the first place, when manures are exposed upon the surface of the earth, even in the hot weather, decomposition no longer goes on so rapidly as when the same manures are kept in a heap, and the ammonia that is produced is gradually carried into the soil by rains. The other soluble substances, as potash, lime the phosphates, &c., are, of course, not lost, because they are not volatile.

Nor are these soluble and valuable substances lost to plants by being carried into the soil before they are needed by growing plants. It has been conclusively by eminent scientific authorities that any good soil, containing a fair proportion of clay and carbon, is capable of taking up and effectually absorbing ammonia, lime, potash, soda, &c., in a soluble form, so that little, if any, passes off in the underdrainage water of such soils. These substances, it is true, may wash from the surface, but they cannot pass through a good soil and go off in the drainage water.

By surface-manuring, we enrich the ground and render it cooler in summer and warmer in winter. Mere shade is an important element in culture, so important that many writers have thought shade alone to be equivalent to manure. A piece of soil heavily shaded by surface-manuring actually decomposes like a manure heap; that is, it undergoes a sort of putrefaction or chemical change, which sets free its chemical constituents, unlocks, as it were, its locked up manurial treasures, and fits its natural elements to become the food of plants. Darkness, moisture and air are the conditions required for vegetable and mineral decomposition. These conditions are produced in the soil by surface-manuring.

Then, again, when the surface manure decomposes, its elements are washed into the soil, in a state of solution, precisely fitted to meet the wants of plants, and they become themselves active agents in promoting further decomposition and chemical changes in the entire body of the soil.

Manure, then, I say, chiefly upon the surface. Do not waste your manures by mixing them deeply with the soil. Plant shallow. Keep roots of all trees, plants and vines, as near the surface as possible. There are weighty reasons for the position

assumed in the last sentence, which I have not space now to enumerate. I say again, plant shallow. Let your soil be deep and dry, but plant near the surface. To farmers I would say, manure upon the surface as much as possible. Top-dress your grass, after mowing in July or August; under a burning summer sun; top-dress in the fall, before and during the autumn rains; manure the surface while the snow is on the ground; while the March winds blow; and while the April rains fall. Manure your grass, instead of your corn and wheat, broadcast, at any time when you have manure and leisure, and I will guarantee that you will be abundantly satisfied with the results.

To fruit growers I would say, do not fill your soil with manure before you plant trees, grape vines, &c. Plant in good natural soil, and manure from the surface, spring and fall, liberally, and properly, and I will guarantee you success far greater than if you plant in holes and trenches filled with manure, as the custom is. Surface manuring and mulching are the true doctrines. I am sure of it.

SUGGESTIONS.

In Plowing, see that the work is well done.—Let the furrow slice be fairly turned that the decomposable matter contained in the roots may be perfectly inclosed, and secured from the wasting effects of the atmosphere. This is very important. If you apply dressing before breaking up, too much care cannot be exercised in the accomplishment of this work, as upon its efficiency will depend, in a great measure, the success of the subsequent undertaking. No balk should be passed over, what the plow sharp leaves should be turned over with the hoe or hand. Many plows perform their work imperfectly. In the first place they do not detach the furrow slice at a proper angle, and then, instead of inverting it, they either stand it on edge, or break it in pieces. Implements of this character are worse than worthless. When land is imperfectly plowed, the after cultivation is always onerous and perplexing, and as a natural consequence is poorly performed. It is therefore much better to expend money for a good plow—one that will perform its work in a satisfactory manner, than to use an imperfect one, as it will entail obstacles which it will be found no ways easy to overcome.

Harrowing.—In harrowing, it is best to pass over the piece lengthwise the first time; then diagonally, and lastly across the furrows. Always roll the land in the first place; this will press down the furrow slice, and give greater efficiency to the action of the harrow, by obviating the tearing up and displacement of the sods by the teeth. Harrows of different sizes and different degrees of fineness should be used, especially where fine tilth is desirable, and this is always the case when grain or small seeds are to be sowed. Where but one harrow is employed, much of the strength of the team, as well as a large portion of time and labor expended in the operation, is unavoidably lost.

MANURING.—Never start your crops. Plant no more land than you can manure well. It is better to have one-half an acre of soil well manured, than ten acres imperfectly worked and manured. It requires no more labor to manure one acre of land that will produce fifty bushels of shelled corn, than it does to manure one that will yield but twenty-five. It is acknowledged to be poor policy to half feed our domestic animals; and why should it not be considered equally absurd and injudicious to half starve our corn and other crops, which we rely upon mainly to feed us.

WOOD ASHES.—Every bushel of wood ashes applied to the corn crop is worth one dollar. The truth of this assertion has been repeatedly demonstrated by the results of experiments accurately conducted. On all light soils, the action of ashes is highly energetic and salutary; they exert a warming and invigorating influence, and promote the rapid growth of almost every species of production.

SALT OR MEAL BOXES.—Domestic animals should never be fed with grain or supplied with salt on the ground or floor of the manger. Boxes of this purpose, formed of wood, should be provided and kept constantly on hand, ready for use. They cost but a more trifle, and may be constructed by any person possessing ordinary ingenuity. In form they should be some-

thing like kneading troughs—small at bottom and large at top, with a plank bottom sufficiently large and heavy to obviate the liability of their being overturned by the animals while in use. A set of well constructed feeding boxes, if painted and carefully taken care of last many years.

CHARCOAL FOR SWINE.—In every hog pen there should be a trough, in which there should be deposited weekly, a quantity of charcoal. The hog eagerly devours this substance, and is greatly benefited and strengthened by its constant use. It prevents many unpleasant diseases, and contributes largely to the fatty secretions.

BRAIMSTONE FOR SWINE.—A few spoonfuls of pulverized brimstone, or flour of sulphur, in a little dung, should be administered as often as once a fortnight to swine while fattening.—*An old Farmer, in Germantown Telegraph.*

Proper Depth of Covering for Seed Wheat.

In walking through a wheat-field I find, once in a while, a bunch as large round as a half-bushel basket, which is of a ranker growth and darker color than that around it. There is something which plants like, and I wish to know what it is.—*D. D. in Sept No. Cultivator.*

I have also observed in wheat-fields stools of wheat far better than surrounding ones, and in examining fields I find sometimes a single kernel of wheat producing but one stalk, and that a feeble one. At other times two or three stalks from one kernel, and occasionally fifteen, and sometimes more will be found. In view of these facts a man will exclaim: "There is something which plants like, and I wish to know what it is."

For several years I have made as extended observations as my time and circumstances would permit, and have extended my observations to as many different fields as are accessible, and I have always found that the kernel producing but one stalk was deposited deep in the soil, while the stools containing several stalks and the "bunches" as large round as a bushel basket, proceeded from kernels which were but slightly covered. From these facts I conclude that whatever partialities plants may have in other respects, they do certainly "like" air and light.

In Gray's Botanical Text-Book, paragraph 118, it is stated that the "budding end" of the embryo plant "invariably rises upwards, as if it sought the air and light, the root end turns constantly from the light, and buries itself in the dark and moist earth." From this first manifestation of an inherent property, it insures that each part of the plant shall be developed in the medium in which it is designed to live and act—the root in the earth, and the stem and leaves in the air.

That portion of the wheat plant above the crown is stem, below the kernel, is root.

If the kernel is planted three inches deep, there are then nearly three inches of the stem in the "dark and moist earth," which, according to nature's laws, should be in the air. To what extend this law of nature can be violated without a detriment to the plant, is a question for agriculturists to consider. If Dr. Gray, in the work above quoted, has correctly stated the laws governing the vegetable kingdom, it is evident to my mind, at least, that wheat should receive but a shallow covering of earth.

May not the disparity in the growth of vegetation, in the same field, observed by your correspondent, D. D., be accounted for upon this theory?—*O. C. Dawar.*

—Napoleon, Mich.

RAISING BEANS.—Beans can be raised where other crops fail. The white bean will cover your barren knolls, and benefit your pocket—and not much trouble either. The worst is to dry them, to those who are not initiated in the mysteries; and these mysteries are simple—only to get your beans when ripe above the ground, with a chance for the air to circulate readily. This secures your bean.

The usual way is, to drive a stake into the ground, and put your beans around it, raising the column as high as your like, and can do with safety from the wind. This is shelter, air and freedom from the ground.

Uniformity of size and ripening should be aimed at in selecting seed. This uniformity will be seen in the crop if fairly cultivated. A uniformity of size gives a good appearance to the beans—no does equal ripening. In a word, every bean clear and hard—all alike—this is what is wanted. Select them accordingly.

Be practical in your ideas through life.

Keeping Celery.

We have heretofore said so much about storing celery that we presume our readers generally know as well as we how it ought to be done. Many people complain of their celery—one of the most difficult garden crops to raise in perfection—that it does not keep well through the winter—sometimes it withers, but oftener rots. It is recommended by some that it should be preserved in the rows where it grows, and that removal always more or less injures it. Where the plant is grown in soil of a dry nature—and celery never should be grown there—it may be kept well in the row; but we deny most emphatically that removal injures it in the slightest particular.

We pursue two modes and find both to answer completely. The first is to remove the celery to high and dry ground, dig a trench spade deep, stand up a row of plants, then three inches of soil, then another row, and so on until about half a dozen rows are finished, then commence another bed, and so on. The soil should be packed in firmly, and beaked up so that the tops of the celery are just covered, then spank off roof fashion to turn the rain. Over this two wide boards, nailed together should be placed, as a security against moisture. For, remember, it is water, not frost, as some say, that rots celery. Frost adds to its tenderness.

Another plan is to sink barrels into the earth, so that the tops are two or three inches below the surface, stand them compactly full of celery, put close or tight covers upon them, and then a couple of inches of soil. By this mode, somewhat more troublesome than the other, ours kept well for the last 3 or three years until all was consumed, which was late in the spring.

As the successful cultivation of this very desirable excellent is attended with considerable labor and care, the best means should be adopted to preserve it in perfection.—*Ger. Tel.*

First Lesson at the Hiding School.

The next day the victim will arrive at the school—a large barn like building—and will find several other victims, old and young, undergoing tuition from the ridingmaster, a man in boots, with limbs of steel and lungs of brass, who stands in the middle of the school, and thence issues his commands. This functionary, with one glance, takes stock of the new arrival's power of equitation, and orders a helper to bring in one of the stock chargers for such riders, a strong old horse, knowing all the dodges of the school, and accustomed, so far as his month is concerned, to the most remarkable handling. He comes in, perhaps, with a snort and a bound, but stands stock still to be mounted—a ceremony which the pupil seems to think consists in grasping handfuls of the horse's mane and flinging him self bodily on the horse's back. The stern man in boots advances and gives him proper instruction, off starts the horse, and takes his position at the end of a little procession which is riding round the school. Then upon the pupils devoted head comes a flood of instructions. Calling him by name, the ridingmaster tells him that "Position is everything. Don't sit on your horse like a sack! Body upright, elbows square, clutch the horse with that part of the legs between the knee and the ankle, toes up, air—this is managed by pressing the heel down—where are you turning them toes to, air? Keep 'em straight, pray I—T-r-r-ot!" At the first sound of the familiar words the old horse starts off in the wake of the others, and the rider is jerked forward, his hat gradually works either over his eyes or on to his coat collar, his toes go down, his heels go up, his knees with his legs as with ours. When the words "Canter!" is given, he is induced to clinking with one hand to the pommel, but this resource does not avail him, for at the command "Circle left!" the old horse wheels round unexpectedly, and the new pupil pitches quietly off on the tan-covered floor.—*All the Year Round.*

Vitality in Horses.

Some experiments have recently been made in France, by persons skilled in the veterinary art, with a view of ascertaining how long horses may live without food in certain contingencies, as, for example, being shut up in besieged places. These results have been achieved. A horse may live 25 days without solid food, and only drink. He may live 17 days without eating or drinking. He can live only five days when consuming solid food, and only drinking. After taking solid aliment for the space of ten days, but with an insufficient quantity of drink, the stomach is worn out. The above facts show the importance of water in the sustenance of the horse, and the desire the animal must feel to be supplied with it. A horse deprived of water three days drank eleven gallons in three minutes.

HORTICULTURE.

INSECTS INJURIOUS TO FRUIT, &c.

From the Bureau of Agriculture.

During the course of the last month numerous insects have been sent to this office for examination; many of them being of little consequence to the farmer, we will merely mention some which require the attention of the agriculturist at the present time, or such as not yet being widely disseminated, if not made known in time, may eventually prove very injurious. Every farmer must have observed his apple, cherry, and various other trees, covered with a web which forms the nest or shelter for hundreds of small hairy caterpillars. These should now be taken from the trees and the caterpillars either crushed under foot or burnt; as, if allowed to perfect their changes and become moths or millers, next year we may expect our orchards and shade trees to be almost entirely defoliated. This insect can be destroyed most readily when in the larva or caterpillar state, congregated together in their web, and before they have changed into perfect insects. It is also of much importance to destroy the nests wherever found, even upon the wild cherry trees and persimmons, in the hedge rows near the public roads, where the farmers think they do no injury, as it is from these uncared for and almost unnoticed nests that the countless hordes of perfect moths issue, which do so much injury to the orchards. The scientific name of the perfect insect is *Hyphantria textor*; the word *Hyphantria* being derived from the Greek word signifying weaver, in allusion to the web woven by the caterpillars, which are commonly known by the name of fall web worms. These caterpillars form large cobweb-like nests, generally toward the ends of limbs, where they devour the leaves in and around them. In this web they live together in societies during the months of August and September, when they afterwards disperse to change into pupae. These pupae are formed in thin, almost transparent, cocoons of silk intermingled with hairs, in which they remain all winter; and they may be found under the bark of trees, fence rails, or wherever there is a convenient shelter. The following June or July the perfect insect makes its appearance, and deposits its eggs upon the leaves or extremities of the branches, to be duly hatched into a brood of caterpillars in a short time. Such being a brief statement of the habits and natural history of this insect, it will be perfectly self-evident to any person, that the most proper time to destroy them is now, when they are congregated together in their web, and not when they are dispersed all over the fences and fields as pupae or perfect moths. Let all the farmers of

a certain district join together in destroying these nests, by pulling them down or burning them, and they will have very little of this nuisance next autumn. The moth produced from this caterpillar is white, without any spots on the wings, and has the thighs of the fore legs of a tawny yellow color in front, while the feet are black and white.

As the grape vine has now become a subject of the greatest importance not only to the agriculturist, but to every farmer, we have received a number of insects which have been found upon it, amongst which is an insect as yet comparatively little known to our fruit-growers, which it may be of interest to mention in this paper. It is a small beetle of a grayish-brown color about 0.20 of an inch in length and covered on the back and wings with grayish hairs. It is stated to have been extremely injurious to the leaves of the cultivated grape vine in Pennsylvania, and has been found on wild grape vines in Maryland; it eats holes in the foliage and completely riddles the leaves. This insect is a *Pathenophorus* or *Ptilis*, and bears considerable resemblance to the *P. viticolicus* of Uhler; if it does not prove to be identically the same. As we have received no complaints of its ravages in other quarters, the conclusion is that it may be only local as yet, or found merely in other places on wild grapes; it may be well, therefore, to warn grape-growers of its existence, as it undoubtedly will spread, and may eventually do much mischief. The correspondent who sent the specimens stated that hand picking had been tried, but that being too slow a process he had dug up his grape vine borders to destroy the pupae, as he thought they came out of the ground, and adds, he thinks their numbers were considerably diminished by the latter experiment. Now, the question is, where do the larvae live, and on what vegetable substance? Also, where are the pupae formed? These facts known, it would be easy to suggest a remedy. The larva or caterpillar of a small moth has been very injurious to the foliage of the grape vine in New York and elsewhere. This insect is called the *Proctis Americana*, or American Forester, by Dr. Fitch. The eggs are laid in clusters of twenty or more on the underside of the leaves in June and July. The larvae or caterpillars, which are of a yellow color with transverse rows of black velvet tufts on each ring, and have hairs on each extremity of the body, are gregarious, and feed in companies, side by side on the leaves, and sometimes on the fruit. They attain their full size in August. In the north there is but one brood of insects during the season, but in the south there are two

on more crops of them yearly. The pupae are enclosed in tough oblong cocoons and placed in sheltered spots. The perfect moth, which measures about 0.90 across the wings, when expanded is very easily recognized by its blue black color and bright orange neck. The end of the body terminates in a broad fan-like notched tuft. These caterpillars may be destroyed when yeting and massed together upon the single leaves, or by syringing the vine with a solution of whale oil soap, although perhaps this remedy might impart a nauseous taste to the grapes if nearly ripe, but it is the only one which can be recommended at present.

In New Jersey a snout beetle, or curculio (*Rachnophorus*) has been very much complained of, as eating holes in the leaves of Indian corn. This insect is from 0.80 to 0.85 of an inch in length, and has a long, horny snout or proboscis, somewhat bent down under the head. It is of a blackish color, with bright sculptured marks on the thorax, and has the wing cases indented with longitudinal stripes and punctures. Some of the specimens sent were covered with earth as if they had just emerged from the ground; it would be well, therefore, to study the preparatory states of this insect, as there is a similar insect of a larger size and commonly known as the Bill bug, from its long snout or proboscis, which is very injurious, as a larva, or grub, to corn in low and marshy situations in the southern States. The egg is probably deposited in the stalk, where the larva feeds upon the substance of the interior. The corn thus attacked turns yellow and eventually withers away without bearing any grain; and it would be well for the farmers in New Jersey and other States to observe whether their corn is not attacked in a similar manner when young, by a small yellowish grub, in the stalk previous to the appearance of the perfect insect, which destroys the foliage merely. In a recent English work, road-dust, soot, and a little guano are recommended to be sown over young plants of cabbage, tobacco, and other herbaceous plants, during the day time, to destroy the little jumping flea-beetles which are so destructive when in the seed bed. In another remedy the same materials are recommended, substituting sulphur for the guano, and applied at night; quicklime is also mentioned as being useful; but a method has been practiced by the Commissioner of Agriculture, which he states to be eminently successful in preventing the ravages of all insects, including the jumping flea-beetle, the cut worm and others. This is nothing but the application of gas-house lime over the beds or fields where the insects are numerous; and the nauseous odor arising from it effectually drives them away. It has also recent-

ly been discovered that a small quantity of coal oil will effectually destroy insect life. These remedies are merely suggested to our farmers as experiments, and we shall be happy to hear from them as to their success, as it is from practice alone that we can learn what is of real utility, or otherwise, and the results will be made known to the public in future papers.

CROSS-BREEDING OF FRUITS.

The botanical character of the plants differ in different species. Some produce the stamens on one individual plant, and the pistils on another; others produce these organs in separate blossoms on the same plant; while other varieties again, have both organs associated in the same blossom, like the Pear, Apple, Cherry, &c. together with certain varieties of the Strawberry. The pistils vary in number in different trees and plants according to the number of seeds contained in the fruit. The Peach, Plum, Cherry, have but one pistil which is in the centre of the blossom. The Peach, Plum, Cherry, &c. have but one pistil, which is in the centre of the blossom. The Raspberry, Blackberry, Strawberry, &c. are furnished with a large number of pistils, one corresponding to each seed to be produced. These are surrounded by the stamens, which also vary in number in different trees and plants.

I make the following quotations from Mr. Downing on the subject. He, however, selects the blossom of the Cherry for illustration, which equally applies to the Strawberry, only observing that the Cherry, as already remarked has but a single pistil, and this standing above the stamens. In the Strawberry the pistils are numerous and compose a short tuft in the centre of the blossom, surrounded by the stamens.

"In the blossoms of fruit trees and most other plants, the seed is the offspring of the stamens and pistil, which may be considered the male and female parents, growing in the same flower. Cross-breeding is, then, nothing more than removing out of the blossom of the fruit tree the stamens, or male parents, and of bringing those of another and different variety of fruit, and dusting the pistil or female parent with them—a process sufficiently simple, but which has the most marked effect on the seeds produced. It is only within fifty years, [more than seventy now] that cross-breeding has been practiced; but Lord Bacon, whose great mind seems to have had glimpses into every dark corner of human knowledge, finely foreshadowed it. The corresponding mixture of plants is not found out, which, if it were, is more at command than of living creatures; wherefore it were one of the most notable discoveries touching plants to find it out, for so you may have great varieties of fruits and flowers yet unknown."

"In figure 1, is shown the blossom of the cherry. The central portion, *a*, connected directly with the young fruit, is the *pistil*. The numerous surrounding threads *b*, are the *stamens*. The summit of the stamen is called the *anther*, and secretes the powdery substance called *pollen*. This pistil has at its base the embryo fruit, and at its summit the *stigma*. The use of the stamens is to fertilize the young seed, contained in the base of the pistil; and, if we fertilize the pistil of one variety of fruit by the pollen of another, we shall obtain a new variety, partaking intermediately of the qualities of both parents."

"The process of obtaining cross-bred seeds of fruit trees is very easily performed. It is only necessary when the tree blossoms which we intend to be the mother of the improved race, to select a blossom or blossoms growing upon it not yet fully expanded. With a pair of scissors, we cut out and remove all the anthers. The next day, or as soon as the blossom is quite expanded, we collect with a camel's hair brush, the pollen from a fully blown flower of the variety we intend for the male parent, applying the pollen and leaving it upon the stigma or point of the pistil. If your trees are much exposed to those busy little meddlers, the bees, it is well to cover the blossom with a loose bag of thin gauze, or they will perhaps get beforehand with you in your experiments in cross-breeding. Watch the blossoms closely as they open, and bear in mind that the two essential points in the operation are: 1st, to extract the anthers carefully, before they have matured sufficiently to fertilize the pistil; and 2d, to apply the pollen when it is in perfection, (dry and powdery,) and while the stigma is moist. A very little practice will enable the amateur to judge of these points."

Mr. Downing alludes only to improvement in the tree fruits, and flowers, by this process, in his remarks; though it is more easily applied to the strawberry than to most other fruits, and the results are realized in the shortest time. In applying the pollen to the Strawberry blossom a camel's hair brush need not be used, as the pistils are numerous, as before remarked; the staminate blossoms need only be gathered just at the time the anthers open and dusted on to the pistillate blossoms.

There is a difference of opinion among practitioners as to the greater or less influence one parent exerts upon the offspring fruit over the other; hence the importance of varying the experiments, and employing the same variety for the male as well as the female parent, and also bringing into use for the purpose the different improved sorts. Mr. Downing does not seem to al-

lude to the improvement of berries by this process, and I presume it has never been applied to the Strawberry in this country, though our finest Plums, Cherries, &c., have been produced in this way.—H. P. B., in *Country Gent.*

Preservation of Winter Pears.

BY R. S. NEWARK, N. J.

WINTER PEARS are a humbug! I have never yet succeeded in ripening a winter pear. I take all the pains in the world in putting my pears away for the winter, and when I look for them to ripen, they are all either rotted or shriveled up. They remain like so many stones until they begin to rot, or else shrivel, so that when I go to try their flavor, I find them tasteless, and tough as leather.

How common such remarks are among amateur pear-growers; in fact, it is an almost common experience. Disappointment in this regard is a thing of every-day occurrence, even among those who, with a lavish hand, have provided all the means and appliances for realizing largely from the winter pear. We have seen large portions of the orchard given to the very late varieties; we have seen costly structures in the shape of *fruit rooms*, put up even before the trees began to fruit; every thing done in a style "perfectly regardless," and yet heard the confession expressed in the commencement in this article. Why is this so? It can not be because winter pears will not ripen, for we all know they do. We see late in the winter or in the spring, temptingly displayed in the window of the fruit-store or restaurant, luscious, waxy-looking pears, but at a fabulous price.

We have known an amateur friend, an enthusiastic pomologist, go and buy some half dozen specimens at a dollar each, and then go home, sit down before a cheerful fire, and with silver fruit-knife in hand, proceed to discuss their relative merits, all through laudable curiosity, and a desire to understand the matter. All this goes to show that there is in the case either an immense difficulty, or an enormous amount of ignorance. We are inclined to think that the latter is the greater obstacle. And we propose, in this paper, to throw out a few hints by way of suggestion to the amateur, to assist him in the care of his winter fruit.

And first, we should suggest to him not to be led into any such silly extravagance as a fruit-room. Such structures are very pretty things to figure in works on horticulture, to ornament strictly *fancy* places, and to aid in depleting a plethoric purse; but for any other than such persons as are largely engaged in the raising of fruit for a market, making a business of it, and giving their time and thought to the work, we consider

that all the fruit-room needed can be found under the same roof that shelters the family.

The maturation of fruit is doubtless a philosophical study, and there are certain conditions of success, precisely as in other branches of science. These conditions being overlooked or neglected, failure is of course inevitable. And to ascertain these conditions we have only to go to nature herself. Take, for example, a tree hanging full of fruit, say the Urbaniste. At the moment we are writing the fruit is not mature. The pears have reached their full growth, yet are still very hard, and the stems unyielding; nevertheless, every day shows some slight change, chiefly in color; ripening is very gradually going on; but, per contra, you will find on the tree or upon the ground, some few specimens which are *prematurely* ripe.—How is this? are not the conditions the same?—Let us examine. On cutting and tasting, we find the natural flavor of the fruit, but not in perfection. Here is the cause: as we dissect we find a grub lodged in the specimen, or that some injury has been sustained. A chemical change has taken place in the juices, but the conditions are evidently wanting. The process, as we have said, is gradual; and as, with the summer and fall varieties, the conditions are all supplied by nature herself, so we have only to profit by the lesson, and carry it out with the winter varieties, imitating nature, and following her motions as closely as we can.

Secondly. A condition of the very first importance, and without which others are of little consequence, is *care in gathering* the crop. The very late varieties should be allowed to hang on the trees as long as practicable. They are not as sensitive to injury from frost as the fall varieties, and need not be gathered so early. We are inclined to believe that a very common mistake is in gathering the crop too soon. The test of the proper time to take the fruit from the tree is the stem's parting freely from the branch upon raising the pear gently in your hand. If it parts easily, it is time to take the fruit; for otherwise it will soon fall by its own weight; but if it has to be torn away by force, and the stem broken, this condition is violated, and such fruit will in most cases either shrivel or rot. And not only should the proper time in gathering be observed, but the greatest possible care exercised in the handling. Every pear should be handled as gingerly as you can. Recollect that you expect every one of these to keep, and to be of great value in the late winter or early spring. Lay them down as if they were made of glass, and handle as gently as if you had hold of your first-born babe. Reject every thing like an imperfect specimen, for your labor and care will all be wasted upon defective ones. And now you have a fine field and subject upon which to exercise your skill and philosophy.

Thirdly. We have now to go back again to nature, and take a lesson from her. These gathered pears are like so many stones. They would make capital round-shot where a battery had run short of ammunition, and would stay a line of rebel infantry as effectually as lead or iron. It is evident, then, that the process which is to soften and render them fit for food, must be a most gradual and slow one. The next thought is, where shall they be put to undergo this process. Here is another stumbling block. We visited, a few days ago, a friend who is enjoying his first year's experience as an amateur in the country, and was shown by him a fine lot of windfalls—Duchess d'Angoulême, and other later varieties. He had them very carefully ranged on a carpeted floor in a bay window, through which the sun was streaming upon them with tropical fervor, in the vain hope of ripening them for use. They were beginning to shrivel most beautifully; we wish we could color our meerschaut with the same facility as they were being *done*. It is needless to add, we showed our friend his mistake, and he *saw* it.

As the process of maturation is slow, the fruit must be placed where no cause will interfere either to hurry or retard. It is a very good practice to carefully wipe each pear and wrap in paper, (common newspaper will do,) and then to pack in small boxes, using great care not to break off any of the stems; for we consider that much of the beauty of a well ripened pear lies in a well-preserved stem, and that the disfigurement of losing it is about equal to a cat's being deprived of her caudal extreme. We prefer small boxes for obvious reasons; by small boxes we mean such as would contain from a peck to a half bushel. These boxes should now be placed in some dark depository, either a dry cellar or room, where the temperature is equable and cold. Not so cold, however, as to risk the congealing the juices of the fruit during severe cold weather, but what might be called a cool store-room, which does not feel the heat of the house, and the temperature of which is not liable to change as frequently as the apartments of the house which are heated; a mean temperature of say from 35° to 40°. The fruit packed away, each variety by itself, should be kept here until near the time of ripening, say within three or four weeks, consulting the books for the period of ripening of the several varieties. The pears should then be brought out, and placed in a room warmed as the rest of the house, and laid upon tables or shelves where they can have light and air, but where they will not freeze at night. If it be an inhabited room, which is warmed by fire heat, so much the better. The pears will now color, and approach rapidly to the condition for eating, grow-

ing prettier every day. Such pears as the *Beurre d'Anjou*, under this treatment, will now become miracles of beauty; and so with all other late varieties. They can be kept, and they are kept, and let in the season, when a pear is in our remembrance as among the delights that were, we have a luscious fruit ripened in its own natural time, and rewarding its possessor richly for all his care and trouble.

Before closing this article we would add, that an occasional looking after and turning over the fruit during the winter will do no harm.

These comprise, we believe, the conditions of preserving winter pears, and of bringing them to a state of perfect maturation. Let them be carried out by the amateur as above detailed, and we think he will cease to hold the language with which we set out, and will say rather, with us, that he has discovered the secret.—*Horticulturalist*.

Fruit Garden.

Gathering and storing fruit. The preservation of winter fruit is a matter deserving more attention and care than is generally bestowed upon it. It is not now as formerly, when fruit eaters and growers were content with a few month's supply. Nothing less should satisfy the cultivator than a dish of fresh, ripe fruit every day in the year. Of course, very much depends upon judicious selection of trees, that ripen fruit in rotation; but the dependence for a winter supply lies mainly in the mode of keeping the late sorts through the winter and spring. The time of gathering requires particular attention; if allowed to remain too long on the tree, the fruit becomes deteriorated. It should be picked just as the seeds commence changing color. The sacrifice of a few fruit in ascertaining this period is of no importance compared with the advantages of having them stored in proper season. Choosing a fine, dry day, pick every fruit carefully by hand, guard against bruising them in the slightest degree.

The smallest bruise lays the foundation for putrefaction. The object now is, to preserve the juices of the fruit without subjecting them to decay. The way to insure this is to place them in a temperature which will neither drain them of their juices by evaporation, nor promote decay through damp. Light also should be excluded. The difficulty of keeping the finer fruits in cellars arise from either moisture or heat in these apartments. It has been found in the preservation of ice, that houses constructed above ground, secured from external influences, keep it much better than the best constructed well. The same principles occur in the preservation of fruit. An exclusive artificial temperature must be maintained, as uniform as possible. A minimum tem-

perature of 34° and a maximum of 40° may be considered the greatest fluctuation desirable. The principal difficulty lies in keeping a proper hygrometrical state in the atmosphere; should any symptoms of damp or mildew appear, it should be removed by ventilation. Care should be taken in the admission of external air whenever its temperature is much above that of the room. When this is the case a deposition of dew will take place and the evil be increased rather than lessened.

Frequent and careful examination will be necessary to remove all that show symptoms of decay, such should be promptly removed and every thing kept as sweet and clean as possible. The late keeping pears, as *Easter Beurre*, require to be removed into a warmer temperature, say about 65° for a week or ten days before eating. This has a tendency to remove all grittiness, and heightens the flavor of many varieties. So much depends upon the keeping and ripening of winter fruit, that many kinds of the highest repute in Europe have been considered here unworthy of notice, simply from want of proper treatment in this respect.

Planting trees should be proceeded with without delay, the past month has been peculiarly favorable for trenching and preparing soil. The advantages of preparing soil when in a dry state are very great, as it crumbles and mixes better, lays open and permeable to the atmosphere, and retains more heat. It is very hurtful to clayey soils to work them in a wet state. The effects may be traced in years afterwards in the hard cemented lumps which nothing but lengthened exposure to rain and frost can pulverize. Where trees are to be permanently planted, they should be put in the best condition, and left as light and friable as possible, since it cannot afterwards be remedied without injuring the roots. Should the weather continue favorable, planting may be continued until the end of the month, after that except on very dry soil, and elevated locations, it will perhaps be as well to defer it until spring. We must again urge the advantages of autumn planting; not only on account of there being more leisure to attend to it at this time, and the soil in the best possible condition for its performance, but principally of the additional certainty that the trees will make a good growth the following season, consequent upon the increase and establishment of roots during winter, and the diminished risk of losing them should a dry summer occur.

GRAPES—both in and out doors, should be winter pruned towards the end of the month. Whatever mode of pruning is practised should be strictly carried out. A continued change of systems

will be unsatisfactory. Nor, indeed, is this the proper season to commence a change, even should one be contemplated. The management of the plant during summer must be conducted with reference to the winter pruning, so that the present will only be the completion of the years labor so far as pruning is concerned. The borders should be slightly forked over, adding a topdressing of woodashes, which supply ingredients largely used by the grape; refuse charcoal is very effective in preserving a proper degree of porosity. A covering of six or eight inches of half rotted manure may then be spread on the surface, which will enrich the soil, and prevent frost from injuring the roots.

Orange and Lemon trees should receive very little water from this until spring, when the wood is properly ripened, and the soil kept comparatively dry, a few degrees of frost will do them no harm. If kept in a cellar no water will be required, unless, as we have observed, in some cases they are placed near a furnace in order to keep them warm. This kindness, however, is entirely misplaced. A close cellar is sufficient. Fire heat is more injurious than beneficial, but where the plants are unavoidably set near heat, an occasional watering will be required, to supply the evaporation from the leaves.—*W. Saunders.*

The Flavor of Fruit Improved by Thinning.

In the Journal of Horticulture are the following very judicious remarks on the propriety of thinning fruit:—“I am quite well aware that I need not tell such men as Mr. Weaver that the flavor of fruit, barring extreme sunless seasons, is entirely under the control of the gardener. A clever man can command flavor; a dull man, when he finds his fruit flavorless, makes idle excuses, which should never be listened to. If a tree trained to a wall be allowed to ripen, say ten dozen of fruit, when five or six dozen only should have been left, they, although they may be of a fair size and color, suffer in flavor to an extent scarcely credible. How often has the gardener had occasion to complain of his pears not being good, although produced on fine trees trained against walls? He complains of the season; but it is in most cases, owing to the trees being allowed to bear just double the number they ought to have done. The following ought to be inscribed on every wall, and in every fruit and orchard house:—*By thinning you make inferior fruit good. By crowding you make good fruit bad.* If very fine and high-flavored fruit is wished for, a tree capable of bearing three dozen of medium-sized peaches should be allowed to bear only twelve or fifteen. This thinning is terrible work for the amateur. It is like drawing a

tooth, and every fruit that falls to the ground creates a pang; but it must be done. A small, sharp penknife is the best implement to employ, and is much better than tearing off the fruit with the finger and thumb. A well-formed peach or nectarine tree, be it bush or pyramid, with its fruit properly thinned and nearly ripe, is one of the most beautiful objects the skill of the cultivator can produce. No camellia, or orchid, or rose tree can be more so. Yet this is an object for which some [too many] gardeners feel contempt.”

United on the New England and General Hort.

TO ATTEND TRIMMING GRAPE VINES.

The fall is the best season to prune grape vines in all latitudes. It is, however, a custom with some grape growers, who reside where winter protection of vines is not necessary, to prune either in the winter or in the spring, before the sap begins to flow. This custom arises, as we believe, in many cases, from neglect to prune in November, preceding, rather than from any substantial reasons for delaying this work.

We will now lay down the principles on which pruning should be based; and some portion of our remarks will be addressed to the novice in grape culture. It is a well understood fact, with experienced grape growers, that the same cane or grape wood never bears but one crop of fruit. For instance, you have a vine that is cut down to the ground in the fall, in order to obtain all new wood. The next season, we will suppose, that you allow but one cane to grow, and every bud of this cane is presumed to throw out a lateral shoot in the following spring, which produces fruit at their bases, where they connect with the parent cane.—Now, let us suppose that this vine is left unpruned, with all its lateral canes as they grow, and we will see where the fruit is produced the next season. The original cane now produces no fruit; it has borne its only crop, and no art of man can make it produce another; but the laterals will each bear its crop, like the original cane, and throw out other laterals to bear the fruit of the succeeding year, and so on until the vines would become an unwieldy mass of entangled canes, if left to the guidance of nature. It, therefore, requires the hand of man to restrain grape vines with a proper growth, and also to see that each season produces suitable wood for producing the crop of that which is to follow.

There is, properly speaking, but one system of pruning—the *renouveau* system, which comprehends the yearly renewing of new wood to bear fruit; but there are scores of ways of training vines; and the grape grower should have his mind fully made up as regards the system of training he desires to adopt, before he commences to prune. The reader will now probably expect us to give our opinion on the best methods of training vines; but to do justice to that subject, we ought to write a special article on it, filling several columns of this paper; and therefore, we can say but little on that point at present.

It depends in a great measure, what variety of grape you desire to train, to be able to give the proper information. A vine that will grow fifty feet in a season, and spread over a square rod of ground, should be trained differently from one that is a slow grower, and never extends its canes, in a season, beyond some few feet. For instance, the *Delaware*, a slow growing variety, may be trained to stakes, while the Concord would do better trained to a trellis, as it is a rampant grower, and could not well be confined to a single stake.

When vines are trained to trellises, generally two good, strong canes are produced the third year, (where vines have not been re-set, which puts them back one season, to be used as horizontal arms, each extending six to ten feet, about eighteen inches from the ground. The laterals are all trained perpendicularly, as they shoot off from the arms, and cut back in August, when they have reached beyond the height of the trellis, seven to eight feet. In November, at pruning time, each alternate cane is cut down to the last eye, near the horizontal arm. Those canes not cut down are the fruit-bearing wood of the

following year, while the buds left on the canes cut down will produce the fruit bearing wood of the succeeding season; and so on from year to year, each alternate cane is cut down to one bud, being every cane that has produced a crop of fruit, after this system has become perfect.

The only other system of training vines, much practiced, is that of tying them to stakes. The German vine dressers in Ohio mostly adopt this system, in training the Catawba grape, which is the principal variety grown there in vineyards. They curve around the vines—two canes to each—and tie them in a circle; but that system does not do as well with our rampant native vines, such as the Labella and Concord. It will answer, however, by setting the stakes from two or three feet apart so that the canes can be made to cover the entire space along the rows of vines in a vineyard.

TRIMMING.—If the surplus wood is wanted to propagate from, it may be cut either into long or short cuttings. A long cutting contains, at least, two buds, and when the joints are short, three or four buds, or eyes. When the eyes are from eight to twelve inches apart, there is no necessity to have more than two to a long cutting, which, when set in the ground, will allow its lower eye to be full 6 to eight inches below the surface of the soil.

Short cuttings consist of a single eye only to each, and are propagated in the open air, by placing them horizontally about one inch and a half below the surface, and kept moist in dry weather by hand watering. On this system of making cuttings double the number of vines can be produced, from a given number of cuttings, than can be by setting the long cuttings in a diagonal position, as they should be set, as the lower eye in the latter case forms the roots of the plants, whereas in the former case an upright cane, as well as roots, is produced. The one eye system is attended frequently with a great deal of labor in watering, while the other generally requires no water, except what the clouds supply.

You first select two, or more, if you please, of the best canes the vine has produced, either such as were entirely grown, the present season (and always select such when they are to be found of well ripened wood, and sufficient length), or those that contain the most new wood, and these are to be your fruit-bearing canes for next season.

Sometimes, when care has not been taken to grow canes, especially for producing fruit the next season, one has to depend on the laterals of the fruit-bearing canes of the present season, in which case, every one is sufficient, which will give you an opportunity, if desired, to grow a supply of fruit-bearing wood the next season from the laterals cut back to one eye.

Rural American.

Longevity of the Apple Tree.

We have just been shown an apple gathered from a tree more than one hundred and sixty years old. It stands on the grounds of Edward H. Seaman, of Jerusalem, Long Island. How much more than a hundred and sixty years have elapsed since this tree was planted is not known, but that it has at least reached that age is certain. The tree has a large top and bears abundantly, although, like some individuals of our own species who make a fair appearance, it is decayed and hollow within, the heart having mouldered away. The age assigned to the finer varieties of the apple tree is from fifty to eighty years, though it is said that with proper care and attention they may be preserved and kept in bearing much longer. In a wild state the apple tree is said to be very long-lived, and Evelyn, in his "Discourse of Fruit Trees" refers to the speculations of an author, whom he calls "our honest countryman Lawson," of whom he says:

"But in our more modern author's calculation for fruit trees (I suppose he means pears and apples), his allowance is three hundred years for growth, as many more for their stand, as he terms it, and three hundred for their decay, which does, in the total, amount to no less than nine hundred years."

This seems abundantly extravagant. Certain it is that of orchards planted in this country eighty years since few trees are now remaining. The pear is a tree of much greater longevity. We know of pear trees on Long Island which may be fairly es-

timated to be a hundred and fifty years old, or thereabouts. Lawson quotes a French author, M. Bosc, as affirming that he had seen pear trees four hundred years old. An apple-tree, however, that has survived the lapse of a hundred and sixty years is a curiosity in this country. — *Rural New Yorker.*

Pear trees are standing in Detroit, planted by the French settlers over one hundred and fifty years ago, and they bear profusely without presenting any symptoms of decay.

Planting Trees.

If our city could have justice done it might be rendered one of the most beautiful in the west, but, while the old Locusts are dying or dead, quite too little is being done to supply their places. Our citizens could not have a better Fall than this for helping us to beautiful avenues of Elms, Maples, Lindens and other native beauties. The leaves have fallen so early as to give us a much longer transplanting season than usual. Will not those good people who have "had it in mind" so many years to set trees before their homes take advantage of the present opportunity? It would add not only to the beauty of the city, and of their homesteads, but to the pride which every citizen should feel in his place of residence. There is one advantage in Fall planting; that, if the trees are properly staked and mulched, they are ready to start in the spring and make a full year's growth; whilst those which are planted in the Spring are checked for the year.

Do, good citizens, cut down those ghostly old dead Locusts, and fill their places with thrifty young Elms or Maples. If he be "a benefactor to his race who maketh two blades of grass to grow where but one grew before," what shall we say of him who makes a noble tree rear its head where nothing grew before? A little less private speculation, a little more public spirit will make the word Adrian suggestive of all that is pleasant and beautiful.

The above is from the "Adrian Expositor, and is applicable to every city and town. Let every man set out shade trees in front of his residence or property, and in five years he will thank himself for the little trouble and expense of the undertaking.

TO MAKE CABBAGE HEADS.—Editors of the Cultivator:—I am in doubt, and it may be so with others, in regard to the best method to produce good heads of cabbage, or as to a way to make them head in the fall. I was informed a few days since by a gentleman about seventy years of age, that he had made it a practice for years to break down the under leaves from the head, thereby letting the sap calculated for the whole plant pass up into the main head, which would make them solid. A little salt sprinkled on each head is said to be useful. Should any one know of a better way than to strip off these under leaves I should like to read it.

Brattleboro', Vt.

MISCELLANEOUS.

LIFE IN TARTARY.

A Summer's Ride beyond the Great Wall of China.

A work has recently been published in London under the title of "Travels on Horseback in Manchou Tartary," which furnishes a most interesting picture of life and manners in that comparatively unknown country. The ride was made on Tartar ponies, in the heat of summer, with the thermometer indicating in the shade one hundred and eight degrees, the travellers starting from Tien-tsin and proceeding to the ancient Tartar city of Moukden. The accommodations on the route were of the poorest character; at one place, which may be taken as a sample of all, the interior of the inn was so beastly that the travellers slept in the court yard, in the open air, making their couch of a door pushed down for the purpose and stretched above a rickety manger. Stale, hard-boiled eggs and "brief" tea of unexampled bitterness, the latter served up in mud-crusted basins—were all the food that could be procured, and for this sorry fare the inconceivable charge was made of four thousand "cash," or, intelligibly rendered the exorbitant sum of sixteen shillings and eight pence.

Finally, crossing an arid plain, the travellers came suddenly upon one of those sights which have been held as an evidence of civilization:

"A high, branchless trunk of a tree rises before us like a lantern pole, with a little constructed box resembling a hen-cage fixed at the top. We were about to pass it, in the conviction that it was intended for a beacon to guide travellers across the waste by night, and were dutifully placing such thoughtfulness of the local rulers to their credit, when, drawing near to its foot, we were disgusted, to find the cage contained a human head—or the remains of one—black, decomposed and crow-pecked. The horribly ghastly face looked down upon us through the bottom apertures; for the skull, partially dragged out of the box by the carrion birds, still kept hold of the plaited queue which was tied round the pole to prevent the loathsome kites and crows tearing it away altogether before it had fallen to pieces."

This hideous object was the head of a robber, and many mementos of the same kind were afterwards seen.

A TRAIN OF MANDARINS.

As the travellers advanced, they encountered now and then wanderers like themselves, and among others a party of mandarins in a clumsy, covered wagon, attended by an escort of brawny, well-armed horsemen.

"To every saddle was hung its matchlock or sword; the first with its muzzle stepped by a plug or red horsehair, was suspended by the sling to the high peak of the crupper, while the sabre, in a leathern scabbard, depended by two loops from the side, in which position it might hang without inconvenience to its proprietor. These wanderers were the finest men we had seen for a long time—tall and loosely formed, their muscular bodies enveloped in the ordinary thin blue or white cotton jacket, and trousers that barely served to cover them; their feet and ankles buried in wide gaiter-like socks, which served also to contain the lower portion of the legs of their trousers; their necks were quite exposed, and their heads surmounted by straw hats wider in the brim than any Spaniard's sombrero, from under which their massive faces, covered with dust in patches, in others as brown as *sepia*, looked out upon our small party with an expression of stupid curiosity and wonder quite characteristic of those country folks, plainly indicating that though their eyes were singly at work their minds had lit tie to do in speculating about us.

"Their masters in the wagons, during the whole of our halt and attempted conversation with sundry members of the rough and ready escort never relaxed the rigid twist of stern incontinence into which they had thrown their physiognomies as soon as we came in sight, though their smothered inquisitiveness must have punished them severely. Sometimes we made certain that a movement was required to ease their tiresome

position, which entailed a sudden projection forward in our direction, when, perhaps they may have caught a glimpse of our boots or a squint at the visible portion of our saddles, though their stolid full-moon faces betrayed them not. Sometimes their official, buttoned, extinguisher looking summer-hats required adjustment either on their heads or the sides of the roof, when something very much akin to a furfire stars at our faces was undoubtedly attempted, though their stolidly fixed eyes were gazing vacantly before them in less than a second afterwards. Their arrogant pride would not sanction their manifesting the faintest approach to civility for the gratification of their all but irrepressible prying wonder.

PICTURE OF AN INLAND VILLAGE.

In the interior districts the travellers found the country much more attractive, with evidences of careful cultivation. One of the villages in this region is thus described:

"For nearly fifteen miles our path lay in the midst of this abundant grain producing country, and led us through these domestic and prosperous scenes. We quitted them with hearty regret when the cart began to trundle from the scarp to a wider road, descending from the fertile slope to the unpretending roomy main street of the little town or village Han-chung. Our entrance having been both rapid and abrupt, the people were thrown into a lively state of confusion, rushing out of doors, hurriedly banging to doors and gates, flying gladly out to meet, and flying with terror away from us—the gentler portion of the community involving themselves in the *motes* in a very ungraceful and unfeminine manner. Luckily, a grey-bearded old countryman, leading a horse with a pair of pauniers on its back, pulled up at one side of the road to make way for us, and after a friendly stare and gape, throwing his rugged umbershaded features into the most agreeable and welcome contortions, he bawled out his sentiments of admiration to the throng in an unmistakable volley of 'How can—how can!—beautiful sight, grand sight!' This certainly allayed the fears and commotions of the most terrified. The midday halt was in the only *auberge* the place could boast; and in a primitive 'bothy' in the courtyard we were content to refresh and rest ourselves as best we might."

CURIOSITY OF THE PEOPLE.

At this village the people displayed none of the stolid indifference exhibited by the mandarins.

"The inn, all the entrances thereto, with the court yard and our own door-posts and window, were carried by the rustic, without a show or feint of opposition from the proprietors, and every paper pane, wooden or mat screen or partition, capable of penetration, was bored and rent by finger or instrument for the scrutiny and information of the hungry riot outside. These wedged and woven nearest us were too much afraid, to intend on keeping their ground, or too much amazed to talk; but many were the questions and remarks bandied about by those pressing and jostling in the rear.

Finding we did not murder and eat them, they soon became confident enough, and two or three even ventured within the doorway, through which they were requested to retire again, as their tobacco fumes were anything but aromatic; while those who saw everything distinctly, passed on descriptions, with their own comments, of our marvellous costume, ways of eating, and general inexpressible odd appearance. A perfect fermentation in the whole mass arose when they began to describe the curious style in which we wrote, our pens, and, above all, the pencils, which they evidently believed to be something miraculous in being capable of writing over whole pages without ink. One spectated respectable old man fairly pushed his way to where I sat, and only stayed his inquisitiveness when the goat like beard of his was sweeping over my book, and I could contain my laughter no longer. Not in the least ashamed or daunted at the length to which his unmanageable curiosity had carried him, he began to turn over the leaves, examining the quality of the paper, and especially admiring its glossiness, and then, after chuckling and nodding his delight—he must have been a paper manufacturer or a schoolmaster—he presented us, with his fan for our worshipful autograph to be inscribed thereon by such a mysterious style. Already one side was figured over with inscriptions—black, clear, and very neatly painted—

so, fancying ourselves highly honored by this compliment, we felt bound to propitiate a short-lived friendship by complying with his reasonable demand, and on the other side penned a regular chronological detail of our names, date of our departure from Tien-tsin, arrival at the village and probable destination. Before we had finished our job half a dozen worthies, with a like number of fans, were in upon us for the same token of our condescension and esteem; and soon the smokers outside had settled off and returned, each possessed of a new fan, destined to become a family curio for the future."

A TARTAR BEAUTY.

At Lanchow the travellers were fascinated by a Tartar beauty, who is thus described:

"In addition to eyes of indescribable loveliness, were cheeks like the almond flower, lips like the peach's bloom, eyebrows as the willow leaf, and; when she moved to a more comfortable standing place, footsteps like the lotus flower. The contour of the face was slightly oval, the features regular and pleasing, with no tendency to the pug nose and coarse lips one sees every day in the streets. There was, too, such a sweet dimpled chin! But, greatly to our chagrin, it wore a glaring mask of paint and powder—sailing ambitiously under false colors. That comely face, and faultlessly chiselled neck, and the womanly brow that must have been fair before, are all grievously soiled with gypsum or some other blanching substance spread over them; a rather strong and irregular tinge of carmine ornaments each cheek, and the small mouth is made a little too conspicuous by the large dab of crimson placed on the middle of the pointing underlip; the eyebrows are gracefully arched into a thin crescentic line of intense black, that overhung lids not deformed by too much of the almond shaped slit between them; at their inner corners on the base of the nose is a small circular patch of vermilion; and a larger one on each temple. From each of the exquisitely moulded ears hung a heavy ring of jade stone of the real felt sooty color. The hair—sleek and dark—is gathered up in two bows on each side, and the back hair hangs in a long plait down the back, while between the bows flutters a lar, a blue butterfly on the slightest movement of her head—setting off this style of wearing the hair in quite an artful way. The neck was uncovered—unless by the paint—and the whole of the figure, except just the bottoms of a pair of light pink trousers, was hid by a long wide robe of figured bluesilk, bound with white, on which a perfect menagerie of birds and beasts, was embroidered. The cuffs of the very roomy sleeves were turned up with the same material, on which a landscape of some kind or other was delineated by the same laborious method. The little feet—thanks be to fate—were natural, and nicely exhibited in a pair of shoes, that, for brightness of hue and elegance of design in the flowers that covered them, might have been borrowed from the choicest collection in the Sultan's harem; though the clumsy addition of a thick white clog sole, in shape like a small inverted pyramid, did not quite satisfy us in the hasty survey we were making."

Plains Talk.

If you are hollow-hearted, and animated by no high and ennobling sentiment—if you have no principle, and sneer at virtue and religion, you can not be a gentleman. Your manners may be fascinating, but they are the glitter of the serpent. Your clothes may be of the richest, they only serve to hide a rascal. There is no restraint upon you but law and public opinion. You hunt for prey under a spacious garb, and decoy with a lying tongue. Your face wears a smile but your heart is full of rottenness most foul. You never can give out the ring of the true coin—it's no use.

A silly mother thinks she can make more than women out of her daughters. She toils in the kitchen, and they simmer and drawl nonsense in

the parlor. She rises with the sun to get breakfast, while they read the last novel in bed. She toils over the washtub, while they drum on the piano. The earnings of the farm are squandered to put on their backs, and to put them in a fashionable school. They are reared in idleness and become accomplished babies, utterly ignorant of all the womanly knowledge so creditable to the sex, and unfit for anything but to dress finely, talk nonsense, and marry a simpleton like themselves. It's no use, mother, your silly dream will never be realized.

A young man—smooth-faced, stripling—with little breeding and less sense, ripens fast, and believes himself an exceedingly nice young man. He chews tobacco, swears genteely, coaxes embryo imperials with bear's grease, plays cards, and stays with the "women" across the gate by moonlight. At concerts he eats peanuts, and manifests his ill-breeding by ill-timed stamping and slang phrases. He stares at every lady he meets, pulls up his shirt-collar, and kneels at the begrimed laborer as he passes him in the street. It is no use, young air, you will never be a man.

On Dark Rooms.

Florence Nightingale's "Notes on Nursing" contain the following useful hints:

A dark house is always an unhealthy house, always an ill-aired house, always a dirty house. Want of light stops growth, and promotes scrofula, rickets, &c., among children. People lose their health in a dark house, and if they get ill they cannot get well again in it. Three out of many negligences and ignorances in managing the health of a house I will here mention as specimens. First, that the female head in charge of any building does not think it necessary to visit every hole and corner of it every day. How can she expect that those under her will be more careful to maintain her house in a healthy condition than she who is in charge of it? Secondly, that it's not considered essential to air, to sun and clean rooms while uninhabited; which is simply ignoring the first elementary notion of sanitary things, and laying the ground for all kinds of diseases. Third, that one window is considered enough to air a room. Don't imagine that if you who are in charge don't look to all these things yourself, those under you will be more careful than you are. It appears as if the part of the mistress was to complain of her servants and to accept their excuse—not to show them there need be neither complaints or excuses made.

A MAMMOTH SWEET POTATO.—Albert A. Webb—gunner at Saint Cloud—showed us yesterday a sweet potato which surpassed anything of the kind we have ever met with, measuring thirty inches in length, and weighing eighteen pounds. The vegetable was grown on a plantation near the mouth of Red river, owned by Major Ackley, of the rebel army, and was brought up the river by one of uncle Sam's boys, as a natural curiosity. —Cairo News.

MAGNA CHARTA BEATEN.—The famous stallion "Magna Charta," the "handsomest" and "fleetest" horse in the State, was beaten in Detroit on Wednesday, 28, inst., in three straight heats. His competitor was a horse hitherto unknown in this State, but famous in Canada and the East as "Sleepy Bill" and "Canada Bill." He goes now by the name of "Tartar." He is of Tippecanoe stock, and is at present owned by Mr. Irwin, of New York, who purchased him from parties in Canada. He is said to have made his mile upon the Long Island Course in 2:23. The time made in Detroit was 2:34, 2:47, and 2:34. Magna was said to be in a poor condition, and broke repeatedly and badly; while Tartar did not do his best at all, but simply kept cleverly out of the way of his competitor. Both horses have made much better time, but there can be no doubt that our favorite Michigan horse has finally found more than his match.

Tax on Slaughtered Animals.

Section 79 of the Excise Law provides that all persons slaughtering cattle, etc., for sale, shall make monthly return thereof, and pay the tax therefor; and, "in cases of fraud or evasion, the party offending shall forfeit ten dollars per head for any cattle, calves, hogs, or sheep so slaughtered, and, upon which the duty is fraudulently withheld, evaded or attempted to be evaded." It has been decided by the Commissioner of Internal Revenue, that all cattle, sheep or hogs, slaughtered for sale, are subject to the duty prescribed in section 78 of the Excise Law, as amended by the Act of March 3, 1863.

This rule is applicable to farmers slaughtering for sale cattle of their own raising, as well as other persons.

Choice Fruit.

No portion of the west is better adapted to fruit-raising than the Saginaw Valley. Apples, Pears and Plums can be cultivated to better advantage than in almost any other portion of our western country, only plant the trees and give them the necessary care.

Capt. C. D. Little of this city, has given his attention somewhat to fruit-raising and has already accumulated many choice varieties of fruit. He placed upon our table the other day a choice variety (the Newton Pippin) produced from a graft only three years old, which were the finest specimens we ever saw—one of these apples weighed a pound. He has other varieties of apples equally as good. He has also some eighteen varieties of choice Pears. Capt. Little authorizes us to say to the farmers of this section that he will furnish them grafts without charge, for the purpose of improving their fruit. This is a commendable offer, and we have no doubt our farmers who are engaged in fruit-raising will fully appreciate it.—*Saginaw Republican*.

During the week past several large clips of wool have been sold in this market at prices ranging from 70 to 73 cents.—*Howell Repub.*

LARGE PEACH.—We were shown, a few days since, a peach raised in Mendon, Adams Co. Ill., which measured 11 inches in circumference, and weighed 10½ ounces. There is no mistake in these figures. We weighed and measured it ourselves. It was of the Early Crawford variety, and was raised on the farm of Abraham Benton, and Bro., and brought to Grand Haven by Robert Leggat, Esq.—*Grand Haven Union*.

LARGE PLUMS.—Dr. McKenzie presented us a few days since, with a few of the largest, plums raised, on his place in this village, it has been our to look upon in a long time. One of them measured 6½ inches around one way and 6½ inches the other. If any person has larger or better we would be most happy to handle a few of them.—*Sanilac Jeffersonian*.

AN EDITOR SOLD.—The editor of an English paper was recently presented with a stone upon which were carved the following letters. The editor was informed that the stone was taken from an old building, and he was requested to solve the inscription. It read:

FORGOT HIMSELF AND HIS OFFICE
LETTER WRITER
IRTA
A
In St—

Eminent men were called in to consult upon the matter, and after an immense amount of time consumed, they were informed that on the stone was: "For cattle to rub their tails against!"

THE OAKLAND COUNTY

Farmers' Mutual Ins. Comp.

Of Oxford, Chartered June 19, 1862.

CAPITAL, \$50,000.

SURPLUS, \$2588.67.

THIS Company, unlike any other Farmers' Insurance Company, is restricted by its Charter to the Insurance of private dwellings and the usual outbuildings connected with them and their contents.

Owners of this class of property, especially the farming community desirous of insuring, must at once see the great advantages afforded them by a Company organized on this plan; if being wholly exempt from the heavy losses sustained by companies that include in their risks manufactories, mills, taverns, stores, and other like hazardous property.

The Directors offer the following summary of the plan of operations:

1st. Risks will be taken only on private dwelling houses and the usual out-buildings connected with them and their contents.

2nd. No more than two thirds the value of any building insured.

3rd. Personal property insured at its full cash value.

4th. No application for a longer term accepted than three years.

C. K. CARPENTER, WM. H. FULLER, A. A. STANTON, LANSON FREEMORE.

JOHN TYLER, F. W. FIEFIELD, L. G. TANNER.

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THE MICHIGAN FARMER.

DETROIT, NOVEMBER, 1863.

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All Business Communications in regard to Subscriptions or Advertising should be addressed directly to BOND & SNYDER, Publishers of the Michigan Farmer, Detroit in order to ensure immediate attention.

TO POSTMASTERS.

We often receive returned papers, with merely the name of the subscriber upon them, and not the town, in such cases it is difficult to find them, as we are obliged to go over 200 pages of names. Will they please to add the name of the Post Office.

"Postmasters are responsible for the subscription of a newspaper or magazine, as long as they allow it to be received at their office, after it is uncalled for, or refused by the person to whom it is directed. The Postmaster General requires that a written note shall be sent to every publisher, that his paper or works lie dead in that office."

The Monthly Report of the Department of Agriculture.

The monthly report which has just been issued from the Department of Agriculture at Washington, given a comparative statement of the condition of the crops, is the most valuable that has yet been sent forth. It gives tabular statements of much value on other subjects, but there are some matters and statements in it we consider wrong, and actually demands explanation. There are other suggestions with which we cannot agree, and which might be as well canvassed now as at any future time.

The Commissioner, in the introductory part of the report, calls attention very properly to the necessity of endeavoring, "by the appliances of science and art," and by introducing improved seeds and valuable articles of produce to increase the productions of the soil, but he takes occasion to say also.

"A thorough system of scientific and practical education in all the branches of agriculture is certainly of the highest importance, and while the department is doing what it can with the means at its disposal in the promotion of knowledge on the subject, it is believed that the establishment by the government of an experimental farm and agricultural school would afford large and better facilities for the acquirement of a thorough education, which is so indispensable to a successful prosecution of the profession of husbandry. We have only to look to the activity with which agricultural schools have been founded on the continent of Europe, and especially in

Great Britain, if we desire to ascertain the estimation in which such institutions are held there.

"Few of the leading German states have neglected to provide, at public expense, some institution or other designed for the improvement of agriculture.

"In the kingdom of Prussia there are several well-sustained schools with extensive model farms, comprising, in the aggregate, over five thousand acres of land. Botanic gardens and valuable herbariums are also provided, with other facilities for the education of youths designed for husbandry.

"About twenty years since the Emperor of Russia established a school in the neighborhood of St. Petersburg, which has been attended with much success.

"The imperial schools of France have exerted a wide influence in the agricultural progress of that country. Austria, Bavaria, Saxony, all have their institutions for the increase and dissemination of agricultural knowledge, and the English government has been constant and decidedly successful in its support of schools established for the education of the farmer and the protection of his rights.

Each congressional district could be represented by farmers eager to enlarge the boundaries of their information, and the aspiring youth upon whom the country depends for the development of its resources in the future, could be trained up to usefulness and honor in the most material of industrial pursuits.

"As this project would require the authority of Congress, and an appropriation of the means of carrying it into execution, it is suggested, especially to those immediately interested in agriculture, and to all of our citizens who are benefitted by an advancement of this interest, to do all they can in influencing their representatives to give to the subject that consideration which its importance demands, and from which the most beneficial results will certainly ensue; and the commissioner will be pleased to receive an expression of the opinions of those interested in this subject. The commissioner derives great encouragement in the advancement of these views by the very general interest manifested by the farmers of the country in the meteorological and other scientific portions of these reports prepared from the observations of the Smithsonian Institution, showing their high appreciation of the employment of scientific education in forwarding agricultural interests."

Now the United States, has already made the most ample provision for the establishment of Agricultural Schools and Colleges in the several States, and these institutions which are now getting fairly into operation, have not yet had time to evince these ability to second the department in its efforts. Any attempt, therefore, to estab-

lish or even to agitate the proposal to found by Congress, a great central Agricultural or scientific school, we would be inclined to regard as interfering most unjustifiably, and unnecessarily with the State institutions; and we doubt the wisdom of even making the suggestion at the present time, when all the resources of the general government, all the energies of Congress, and every mind should be directed towards crushing out the infernal conspiracy that has attempted to divide the country, towards over coming and destroying the military power which is its heart, and towards annihilating the institution that is the enemy of civil and religious liberty. It may be said that it is the duty of Congress to provide a school for education in agriculture and the arts of peace, as much as it is to keep up West Point, and to provide for education in the art of war; but the constitution reserves to the Federal government the power to make war, and it does not reserve to itself the power to promote agriculture. The appropriations which were made by the late Congress, for the establishment and aid of Agricultural Colleges in the several States, are destined to do an immense amount of good in the very direction to which the Commissioner aims, but these institutions must have time to grow into the knowledge and affections of the people whom they are designed to aid. We think that if Congress, in following up these appropriations, would grant to the head of the Agricultural Department not supervisory powers, but visiting and examining powers, it would necessarily stimulate competition, and would be enabled to advise with their several Boards of control, as to the right methods to be pursued to promote the usefulness of the new school, as practical experiments of agriculture, in the several climatic regions of the United States, and they in return would render back to the Bureau of Agriculture, information and results which would render it more eminently useful and spread abroad a higher and more successful system.

STATEMENTS OBTAINED FROM THE REPORT.

We learn from this report that the estimated amount of the crop of wheat in the United States for 1863 leaving out Tennessee, Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, North and South Carolina and Virginia; is 191,068,239 bushels, being an increase of 1076,739 over the crop of 1862 in the same States. According to these tables, Michigan produces more wheat than the State of New York, last year having yielded 14,963,735 bushels, and this year 13,966,153 while New York only produced 13,021,650 bushels, according to these estimates. Illinois is the greatest wheat growing State, her product this year

reaching 31 millions of bushels. Ohio stands next, and next is Wisconsin and Indiana, then Pennsylvania, and sixth is Michigan. If we estimate that every family of six persons, will consume a barrel of flour in two months, and estimate the population of the State referred to above to be about 24 millions, we have to provide for a consumption of 120 millions of this wheat in our own States, then for seed there will be needed 16 millions of bushels, and for export and the use of the war, there would remain about 53 millions of bushels. These are round numbers, but they approximate some what to the actual results.

Again we are informed by the report of the Commissioner that the United States supplied Great Britain, with 32 per cent of all the foreign wheat imported into that country for the half year ending June 30, 1863, and 60 per cent of all the flour. It is also stated that the total amount of wheat imported into Great Britain in 1861, was "6,912,815 quarters, equal in American bushels to 64,529,607." Now taking the quarter at 480 pounds or 8 Winchester bushels, of 60 pounds per bushel of wheat, we only make the quarters amount to 46,302,520 bushels. Will the Commissioner please inform us what standard of measures he makes use of. ALEXANDER in his dictionary of weights and measures, makes the quarter eight Winchester or American bushels, and the imperial quarter 8,252.12. But it is the quarter of 480 pounds that is used in the measurement and sale of wheat. Even accepting the imperial bushel for the English measure of eight bushels, it would not make the amount according to the tables by eight million of American bushels, and we think it is an error to assume the English quarter to be 560 pounds, or at the rate of eight of the old Liverpool bushels of wheat of 70 pounds. The English imperial bushel holds 2,178.19 cubic inches, and the American bushel holds 2,150.42 and this capacity will seldom permit the heaviest grown wheat to weigh over 65 to 66 pounds to the bushel of the capacity of either the American or English imperial standards.

Important to Farmers.

A case was lately tried before the United States Commissioner that interests all farmers who are desirous of selling their produce in this city, and which will save them from the clutches of hucksters, who now control the market in vegetables and other farm produce. It was decided that no license was required to entitle farmers to the privilege of selling the products of their own land. They could either retail it to citizens or wholesale it to dealers, without any liability under the revenue law, arising from not taking out a license. This will allow farmers in the vicinity

of Detroit to sell to citizens, and will undoubtedly reduce the present exorbitant prices demanded by hucksters, who control the produce market, thereby benefiting both producer and consumer to a considerable extent. Farmers have heretofore considered that retailing their produce without first obtaining license to do so, would make them liable to a heavy fine, and upon discovering the contrary will probably select their own customers through the city.

THE PRACTICAL SHEPHERD.

A complete treatise on the breeding, management and diseases of Sheep, by HENRY S. RANDALL, L. L. D., with illustrations. Published by D. T. Moore, Rochester, N. Y.

A good thorough work on Sheep husbandry adapted to the wants of the American sheep and wool grower, has long been wanted, most of the works which have heretofore been published as American, have borrowed a large amount of their contents from British sources, and the writers have hardly been able to grasp the subject, either from lack of personal experience, or because they had not literary ability to transfer what they did know to paper. In both these important qualifications, Mr. Henry S. Randall was not deficient, and he has made the very best book extant on American Sheep Husbandry.

The *Practical Shepherd* is a work of more than ordinary merit, as yet we have not had opportunity to do more than glance through it, and to take note of its contents, and its mode of treatment of the important animal the Sheep. The work begins with a description of the various fine-wooled breeds of the Merino race, and a brief and clear history of their introduction into the United States, with notices of the various families which have been bred on this side of the Atlantic. A very complete chapter is also written on the various other kinds of sheep that have been introduced into the United States from time to time. But the main design of the work evidently has reference to the fine-wooled race of sheep, and two very excellent chapters are given to the points to be mainly regarded in fine-wooled sheep, and the adaptation of the breeds to the different localities where the sheep breeder may be located. A good chapter is appropriately introduced on the prospects and profits of wool and mutton production in the United States, and three other chapters discuss the principle of breeding, breeding in-and-in, cross breeding, &c. A large portion of the work is devoted to management of sheep during the spring, summer, autumn and winter, and also on the prairie. The balance of the work is assigned to a description of the anatomy and diseases of the sheep, with prescriptions for their

treatment. The work concludes with an interesting chapter on the various kinds of Shepherd dogs, and an appendix containing much information of a general kind that was not introduced in the body of the work. Taken altogether it is a most valuable contribution to the agricultural public at the present time, when wool growing has received such an impetus as to give it a precedence over all other kinds of husbandry.

There is one point in the work, however, to which we call attention, and that is classification, and the vagueness with which the words "breed" is used. The author in fact in the introduction, confesses the difficulty of adopting a nomenclature to be inseparable. We cannot see it in that light. In writing a standard work, or a work that may be taken as a standard, one of the most important duties is to lay down some system of terms, by which the reader shall have a clear comprehension of what he is to read. The terms adopted by Mr. Randall as designations for the various divisions, and sub divisions of sheep we consider neither correct, nor logical, and when he comes to the "minor groups, he has to adapt such an awkward term as "sub-family." This error we think arises from a misconception, and misuse of the word "breed." This term is simply an agricultural expression for a certain variety of domestic animal. It is not recognized in any scientific category, and it is its introduction sometimes to express a race, sometimes a family, and sometimes a tribe, that confuses. In this case the Merinos or fine woolled sheep are a distinct RACE of sheep, just as much as the wooly heads of Africa are a distinct race of man, this distinction of race however does not make them, a different species. The merino is a term that now includes all that great division of sheep known to be fine woolled, and hence they are called a race, just as the Poles and Hungarians, and Servians belong to the Slavic race, or the Chinese and the Tartars nature belong to the Mongol races. The Spanish merino race of sheep became divided into flocks to which were given distinct names, such as *Paular*, *Infantado*, *Negretti*. These divisions, flocks or families, though acknowledged to Merinos, yet were bred separately and distinctly, on account of certain characteristics, which owing to breeding became constitutional, and hence they may be properly termed breeds. Just so with the short wool race of Great Britain, which are known as "Down" sheep. They are a race, and a division that have been bred for certain characteristics, are known as the *Southdown breed*, another as the *Hampshire Downs*, and another as the *Shropshire Downs*. Each of these is a breed, because they have by a long series of care and attention to certain points been bred till these

points have become constitutional, and have become in agricultural language a *breed*. Now in these breeds there may be any number of flocks or families. We have referred to this matter here because Mr. Randall in his book has allowed to escape a fine opportunity to point out how our American tribes of sheep might be distinguished and designated so that parties seeking to improve or lay the foundation of flocks might understand what they were about, and where they might look for the stock they needed.

It will be seen by the remarks we have made that we seek some classification that all would understand, and we would thus point it out, with regard to our fine woolled sheep. We would give the generic title of Merino to the whole race, including Spanish, French, Saxon, Silesian and Saxon. The next division, ought to be the *breeds*, and then the family or flock.—Hence we would have

1. The race—*Merinos*.
2. The breed—*Paular, Negretti, French, Saxon, Silesian, &c.*

3. The family—*Jarvis, the Atwood, the Rich*.

4. The flock, which would designate what branch of the family the individual ram or ewe was selected from. For example, in Lapeer county in this State, resides Mr. Charles Rich, one of the State Board of Agriculture, who has in his possession a fine flock of the Paular Merinos referred to on p. 30, as having been most carefully bred, from the original importations purchased in 1823 by the Hon. Charles Rich, of Vermont, then a member of Congress. A purchaser from Mr. Rich's flock in this State, would simply have to express the purity of its breeding by its name, which would 1. *Merino*, the race, 2. *Paular*, the breed, 3. *Rich*, the family, 4. the flock of C. Rich, of Michigan. The sheep would therefore be designated a *Rich-Paular-Merino*, from the Michigan flock. Possibly change of climate, and persistence in selection and breeding, may raise the Michigan flock to the dignity of distinct family, in the future; and the *Rich-Paular*, may eventually rise to the eminence of a distinct American breed, and then may even arise such an improvement or difference between the American and the original Spanish that two distinct tribes of the Merino race may be recognized, but we have hardly reached that point yet, though we are approaching it, if we may judge by the decision made during the past season at the great Ham-burgh exhibition.

THE SECRETS OF FARMING.—"My farm is overflowing with plenty, and promises a grateful return to drainage, deep tillage, plenty of manure, and irrigation."—*Alderman Mechi*.

The Trial of Threshing Machines at Battle Creek.

During the past month we made a brief visit to Battle Creek, during one of the days of the Annual Fair of the Battle Creek Agricultural and Mechanical Association, and though the Association had not been favored with good weather, it was gratifying to see that the visitors and exhibitors took advantage of the "spell" of fine weather that was "on hand" while we were there. There was a very fine turn out of cattle, and there was a promise of a good turn out of horses the next day. H. P. Sly was at this fair with a small herd of his stock of shorthorns, and we noted that W. Conley and some other breeders had their herds on hand. Still the show of cattle was hardly as good as we should expect to see in a locality with as much of this go-ahead in it, as there is around Battle Creek.

The chief interest of this exhibition, however was really entered in the machinery department; and in the trial of threshing machines, the managers beat the State fair all to pieces. In fact the exhibitors themselves, had evidently met after the State fair, and determined to have a trial that should be reliable as far as it could possibly be made so. The arrangements were very perfect. Each machine was to run by a horse power of the same quality, and with the same number of horses, each thrasher and cleaner, however, having the privilege of working with the power with which it was accustomed to work in the field. The committee had provided ample supplies of wheat in the straw, and each machine was also allowed whatever help was needed to seed it. The time was kept accurately, as we happen to know, being ourselves one of the time keepers during the trial of some of the machines were running. The wastage of each machine was as accurately tested as it was possible, the screenings and chaff of the tailings thrown over the end of the separator being taken up carefully on canvass, and run through a machine to separate all the grain from the chaff. This grain was measured and made an element in judging of the capacity and completeness of each machine. The results will be seen from the report which we copy from the Battle Creek Journal, and by which it will be seen that the Pitts' machine, which has taken gold medals at the Great Exhibition of England and of France. Maintains its superiority even among the critical farmers of Calhoun county, and was awarded the premium. The machine it will be seen, threshed, within 6 pounds of three bushels per minute, with a wastage at the 31 pounds of wheat in 37, or at rate 0.83 of a pound per bushel. The Warriner machine threshed at the rate of 2 bushels and 9 pounds

per minute, with a wastage of 0.40 of a pound per bushel. The Nichols & Shepard machine, threshed at the rate of 2 bushels and 10 pounds per minute, with a wastage about the same as the Pitts' machine.

Among other things we noticed at the fair was a very neat and useful pair of nippers for clinching the nails when shoeing horses. Its application was made on the grounds, and its ability was demonstrated as a most useful contrivance for blacksmiths, saving a great amount of hammering, and do the work of clinching quicker and more thoroughly than could be done by hand and hammer.

Report of the Committee on Trial of Threshing Machines:—

Committee would report that, in the trial of which they were to judge, there were six machines entered, each threshing an average of 3½ bushels of wheat; and occupying mostly the whole time of the three days of the late fair, and was attended with a great deal of interest, during the whole time, and we believe resulted in a great benefit to the farming community and to the manufacturer. We believe the farmers will have a better sense of what good threshing is and of that waste of wheat there is in threshing, than ever before. We also believe that manufacturers and runners of threshing machines, will see more fully the importance of having their machines in good order and well handled. As neither the Association or Committee had anything to do with the management of the trial, they do not consider themselves or Association at all responsible for any of the delays or breaks. The competitors having entered into the following stipulation, left nothing for the Committee to do but to judge of the machines by their work, quantity, quality and time being the only considerations allowed under these stipulations:

1. Each machine shall not use more than ten horses.
2. The quantity and quality of the work done in a given time, to decide the merits of the machines.
3. The grain to be weighed to decide the amount.
4. Two men shall be selected as time keepers, and they shall appoint a clerk to keep a record of time.
5. Each machine to thresh not over two bushels before entering on the trial.
6. The time shall be estimated from the feeding of the first bundle to the feeding of the last bundle.
7. In case of actual breaking of belts or castings or any part of the machine, the time to repair shall not be counted.
8. But if the machine clog or fill up, or any of the belts throw off, the time shall be counted.
9. Each machine shall thresh three loads of grain.

Signed:—Barker & Crane, C. E. Warriner, A. Scogall, Levi Brown, Nichols & Shepard, Stephen D. Crane.

The trial commenced on the afternoon of the

FIRST DAY.

1. With the "Young America," manufactured by Barker & Crane, of Battle Creek, run by manufacturers, which threshed 87 ½-60th bushels in 16 21-60th minutes, wasting 1 44-60th bushels; an average of about 2 23-60th bushels a minute.

2. By a "Warriner Machine," manufactured by C. Warriner, of Battle Creek, run by manufacturer, which threshed 86 88-60th bushels in 14 44-60th minutes, wasting 2 48-60th bushels; an average of about 2 26-60th bushels a minute.

SECOND DAY.

3. By the "Vibrating Separator," manufactured by Nichols & Shepard, Battle Creek, run by manufacturers, which threshed 87 82-60th bushels in 17 16-60th minutes, wasting 81-60th bushels; an average of about 2 10-60th bushels a minute.

4. By a "Warriner Machine," manufactured by S. Warriner, Battle Creek, run by Stephen D. Crane, which threshed 87 84-60th bushels in 17 38-60th minutes, wasting about 18-60th bushels; an average of about 2 9-60th bushels a minute.

THIRD DAY.

5. By the Pitts' Machine, manufactured by Brayley & Pitts, Buffalo, N. Y., run by Mr. Bronson, which threshed 86 87-60th bushels in 13 4-60th minutes, wasting about 40-60th bushels; an average of about 2 54-60th bushels a minute.

6. By a Pitts' Machine, manufactured by J. S. Upton & Co., Battle Creek, run by A. Scogall, which threshed 80 84-60th bushels in 18 30-60th minutes, wasting about one bushel or a little more; an average of about 2 18-60th bushels per minute.

All showed great threshing capacity and doing their work well under circumstances; some of them being badly handled and crowded beyond their capacity. We find it difficult to decide where there are so many good machines; but taking quantity, quality and time as a basis to form an opinion, we feel bound to give to the Pitts' machine manufactured by Brayley & Pitts, Buffalo, N. Y., the preference for its great threshing capacity and neatness of work; and would recommend it to the farmers. We would also recommend the Warriner machine run by S. D. Crane, for doing the *nearest* job during the trial.

Committee—David Gould, Samuel Convis, William Goss, H. Brady and Adam Charlton.

Meteorology.

The Grand Haven Union is giving a very able and interesting series of articles on "Education of Farmers,"—below we publish one of them, which contains important practical facts:

By *latent heat* is meant hidden or imperceptible heat. Place an open vessel of water upon a stove and drive the fire, and you will quickly raise the temperature of the water, to 212 degrees, the boiling point. You may now make ever so much addition to the fire, and you will find it impossible to increase the heat of the water. Every additional amount of heat generated, is carried off by the steam, in a latent, hidden, or imperceptible state. By a process we cannot now stop to explain, it was ascertained by Dr. Ure, of Glasgow, that the amount of heat carried off in this way by steam, may be equal to 1000 degrees. This rapid abstraction of heat from a body by evaporation produces a considerable degree of cold, or what is in principle the same thing, prevents the temperature rising by the application of heat. Ice can be manufactured in the hottest weather, by filling a porous jar with water, and wrapping it with several thickness of cloth kept wet. The more rapid the evaporation from the wet cloths surrounding the jar, the more heat is drawn away from the water within, and the sooner it will freeze. The same principle is illustrated by a common practice at sea. A vessel is becalmed. Not a breath of air seems to be stirring, and the sails flap idly against the rigging, as the vessel rolls upon the uneasy sea. Sickened with the dead monotony of his position, the sailor is anxious to peer into the elements and the future, if possible to ascertain from what quarter the wind is going to blow. He wets his finger, raises it in the air, and as one side of it becomes cool, he says the wind is coming from that quarter. The explanation of this is, that there is a slight as not to be perceptible in any other way, quietly moving against one side of the finger, and causing a more rapid evaporation of the moisture on that side. The evaporation produces the feeling of cold by carrying off the heat of the finger rapidly, in an insensible state. He judges, that, if there is any motion of the air, the wind is probably coming from that direction.

The third consideration to which we proposed to call the attention of our readers, is the *temperature of the atmosphere as related to its humidity or moisture.*

Under all circumstances, the atmosphere contains more or less moisture in an invisible state. The amount thus contained depends upon the temperature. The theory is, that the particles of air are not in direct contact with each other, but separated by a greater or less space. The spaces may be filled with moisture, and yet the moisture be invisible. But if more moisture exists in the air than is sufficient to fill these, it assumes the visible form of vapor. That, as the air becomes rarified or expanded by heat, the particles are further separated, and it holds a greater amount of moisture in an invisible state. At the freezing point, 32 degrees, the air will contain an amount of moisture equal to a one hundred and sixtieth part of its own

weight. For every increase of temperature of 17 degrees, its capacity for moisture is doubled. So that at 59 degrees it will hold one eightieth of its own weight, 86 degrees, one fortieth, at 113 degrees one twentieth of its own weight. The atmosphere over large bodies of water is always nearly or quite saturated with moisture, whatever be its temperature. It may be saturated and appear perfectly clear. If it is more than saturated, the balance assumes the form of vapor. Now if a volume of air thus saturated comes in contact with a current of much colder air, the decrease of its temperature will cause a part of the moisture to be precipitated in the form of fog. Or if the decrease is greater still, there will be so much moisture condensed, that it will fall in drops of rain.

A familiar illustration of this is found in every kitchen, or every washing day in winter. The washing has been going on with closed doors, and no vapor is seen. The heated air of the room holds it all in an invisible state. But open an outside door for moment, and you are at once surrounded with a thick cloud of vapor. The cold external air has so cooled the room that the extra moisture which it cannot contain is condensed in the form of vapor or fog.

Another fact is accounted for by this reasoning. It is well known that we have along the eastern shore of Lake Michigan, more rain and snow in the cold season, than farther in the interior. Westerly winds, which greatly prevail in this latitude, come from the lake, saturated with moisture, which meeting with cooler currents as they come over the land, becomes incapable of retaining the moisture, which is condensed into drops, and falls in rain, or the vapor is frozen into snow. In hot weather, the air on the immediate surface of the earth is warmer during the day than that over the water, and consequently the moisture with which the air is changed is not as likely to be condensed into rain, except when the saturated air from the lake, is met by cooler currents from some other quarter.

Now in this condensation of the moisture in the atmosphere, by the fall of temperature, if the fall is slight, fog only is formed. Fog is composed of very small hollow globules of water. Like soap bubbles, which they resemble in form, they are lighter than the air, and float in it. If now, these hollow particles should become broken, or unite together so as to become heavier than the air, they form drops of water, which fall in showers. Such a bursting and uniting of these globules, may be caused by a further condensation, or by electricity, or by a sharp concussion of the atmosphere, such as is produced by a thunder clap or by the continuous discharge of heavy ordnance.

But this condensation of the invisible vapor floating in the air, may be so sudden and rapid as to produce drops of water without forming fog or cloud, and thus a shower of rain may fall from cloudless sky. Several instances of the kind have fallen under our own observation, and the like has been observed in various parts of the world.

FORBIDDEN FRUIT.—M. Noel, a French agriculturist, speaking of the introduction of the potato into France, says: "This vegetable was viewed by the people with extreme disfavor when first introduced, and many expedients were adopted to induce them to use it, but without success. In vain did Louis XVI. wear its flower in his button-hole, and in vain were samples of the tuber distributed among the farmers; they gave them to their pigs, but would not use them themselves. At last, Parmentier, the chemist, who well knew the nutritive properties of the potato, and was most anxious to see it in general use, hit upon the following ingenious plan. He planted a good breadth of potatoes at Sablons, close to Paris, and paid great attention to their cultivation. When the roots were nearly ripe, he

put notices around the field that all persons who stole away any of the potatoes would be prosecuted with the utmost rigor of the law. No sooner were the new roots thus forbidden, as it were, by authority, than all persons seemed eager to eat them, and in a fortnight the whole crop was stolen, and without a doubt, eaten. The new vegetable having been found to be excellent food, was soon after cultivated in every part of the kingdom.

PAYING FOR AN EDUCATION.

HILLSDALE, Oct. 7, 1863.

MESSRS. EDITORS:—Just as I expected—you know, I told you in my first communication to the *Farmer*. That when a man got his name in the papers it was a pretty sure sign he was going to burst up. Well now, that you have made me somewhat notorious, please let me say to your readers that I begin to feel already quite on the road to ruin.

Being a young farmer you know, I am liable to do many things wrong and suffer severely for it. But there you know it has always been said that one must pay for his education, and I am just going to tell you how I have paid \$500 the past year in my wheat and corn crop alone. I sowed all white flint wheat last fall, and wheat after wheat, and the consequence was, the insects eat it nearly all up leaving me but six bushels per acre, the land was in good condition having had but one grain crop on it for three years.

My corn I planted on a field of 14 acres which had been cropt ten years without any cessation and without manure, clover or plaster. This crop too like the wheat was a failure owing to the exhaustion of the soil and the frost. The frost was so severe that I have not cut up a hill. But then I cannot attribute the failure to the frost, it was an out and out failure, and although there was a fine growth of stalks, there were few ears, say about twelve bushels per acre.

Well I think I am now pretty well broken in, and if my former predictions do not prove true, (i. e. if I do not burst up), I hope to have something better to tell you hereafter.

"Learn to do good,
From other ills."

D. BEEBE.

WATER-PROOF GARDEN WALKS.—The London *Gardeners Weekly Magazine* and *Horticultural Cabinet* states that cement walks are becoming common in English gardens. They are made as follows: Procure a sufficient quantity of the best Portland cement; then turn up the path with a pick, and mix six parts by measure of clean screened gravel with three of sharp sand, and

one of the cement; then work them thoroughly with a spade in the dry state. Now add sufficient water to make them into a paste similar to stiff mortar, and lay it down on the walk, on a hard bottom, to a depth of two inches. It is spread with a spade, and the walk made with a slight curve rising in the middle. In forty-eight hours it becomes as hard as a stone, and not a drop of water will pass through it. Worms will not work through, not a blade of grass grow upon it.

Agricultural Bureau.

THE EXPERIMENTAL GARDEN.—A visit to the experimental garden in Four-and-a-half street, last week, interested us much, especially as Mr. William Saunders, under whose judicious and scientific care it has been placed, was kind enough to accompany us in our explorations and answer any questions we proposed to him. When it is remembered that but a short while ago the site of this fine garden was only a worthless swamp—that, in point of fact, the garden is all “made ground,” having been filled up with rubbish, and only topped with earth—the institution cannot fail to be regarded as a great success. The garden is now in better order than it has ever been, for Mr. Saunders’ energetic and conscientious management is beginning to tell upon it. Many needless walks and merely ornamental beds have been dispensed with, and the room thus wasted has been turned to good account. Nevertheless, the garden is still rather ornamental than useful, at least to the degree which Mr. Commissioner Newton and Mr. Saunders desire it to be. It contains, however, an immense number of fine grape vines of countless varieties; large beds of strawberries, raised from seed of the very best kind, and a variety of other fruits, as well as experimental beds of cereals, potatoes, &c., with a remarkably healthy collection of greenhouse and other plants and shrubs. But what really is needed, and for which we trust Congress will provide at an early day, is an experimental farm, on which the value of all new importations of seeds, roots, fruits, &c. can be properly tested for a year or two before their distribution. The Agricultural Bureau can never have fair play until it has such a field for the conducting of its experiments. The site of such a farm ought, of course, to be within very convenient reach of the city that persons from the country visiting Washington may be able to get to it and obtain the information the director would be able to impart. The Commissioner of Agriculture is constantly receiving cereal and other valuable growths from abroad, which, if they could be thoroughly tested under his own observation, might be made of in-


calculable value to the country. But the present garden is far too limited for such operations, nor is it favorably located. No one can be more solicitous than Mr. Saunders to benefit as well as to gratify visitors and the country, but the scale is too small for the gratification of this wish. Let us have an experimental farm, and the whole country will be immeasurable and permanently the gainer.—*Washington Chronicle.*

Farming Prospects of the Boise Country.

This new portion of country, comprising Idaho Territory, is creating much excitement in consequence of the newly discovered gold mines. The search of which has opened up more discoveries of Territory to the world, than the pursuit of any substance. The Walla Walla, Washington Territory *Statesman*, gives the following information in regard to the Agricultural resources and prospects, which do not appear very alluring to a permanent settlement for agricultural pursuits:

The united opinion of those who have engaged in farming this season in the vicinity of the Boise mines, is, that agriculture can never be made profitable there. The soil of the valleys which looks so inviting to the agriculturist in early springs is represented as very light and sandy and vegetation upon it dries up before midsummer. Along the rivers, where all the best land lies, the soil is mostly “made land”—a dark sandy loam, very light; and as the waters in the rivers recede, the land dries out by the under-drain. Irrigation cannot be applied in many places, in consequence of scarcity of water, and where it has been attempted it has proved almost an entire failure on account of the lightness of the soil. These causes render the land entirely unsuited to the growth of any variety of grain, and of most kinds of vegetables. But for the production of vegetables, excepting the most hardy varieties, even if the soil were well suited, the climate is not adapted on account of frosts. We are informed by those who have been in the Boise and Payette valleys during the summer, that heavy frost have fallen there every month, and that the vines planted there were killed as soon as they came up. Experiments were made by planting both early and late.

Melons raised in the Boise Valley, Idaho Territory, have sold the present season, for from \$8 to \$10; corn, 25 cents per ear; cucumbers, 12 1-2 cents; potatoes, 50 cents per pound.

 To prevent fence posts from heaving, cut a good-sized notch in the post near the lower end, and, when setting, place the end of a flat stone in it. Pack all down solid, and the post is secure. Two notches would add to the firmness of the post.

AMERICAN POMOLOGICAL CONVENTION.**Currents.****LA VERSAILLAISE.**

Parsons, of N. Y., had found this variety very good this year. President, thought it and La Fertile d'Angers were good enough, when you let them get ripe.

RED GONDOIN.

Worcester, of Vermont, has a high opinion of this, and thinks that it had been rejected because it was not allowed to ripen. Ried, Prince and Earl considered it worthless, and suspected he might not have the true variety.

LA CAUCASE.

Worcester thought this similar to the Versailles, but with slight differences.

President, had for several years thought there was a difference between the two; had since given up that idea, and now cultivated them as one.

LA HERTIVE D' BERTINE.

Worcester, had found it a poor bearer, but sweet.

President, had found it an abundant bearer.—The fruit is very dark red and sweet, but it must remain on the bushes very late to be perfect.

Earl found it to ripen early and hold on very late. It is a capital market currant, and a very great bearer. He had considered that and the Versailles the most valuable two we have. As to quality, he considered the White Gondoin the best.

Raspberries.**BRINCKLE'S ORANGE.**

Hyde, of Mass., inquired about Brinckle's Orange, with regard to its adaptability to market.

Downing, Worcester, and others, thought it one of the finest of berries for family use, but unadapted to market, on account of its color.

HORNET.

Reid, of N. J., inquired about the Hornet Raspberry.

All who spoke of it agreed that it was a large, firm, red berry, and a capital variety for market, as well as for private gardens.

RED ANTWERP.

Prince, of N. Y., doubted if the real Red Antwerp exists in six collections in the United States. He thought it decidedly the best raspberry he had ever seen, and the largest, except one of Dr. Brinckle's—the Red.

AUTUMNAL RASPBERRIES.

Barry, of N. Y., I think that the Belle de Fontenay and Merveille de Quatre Saisons, for fruits of that kind, are of some value.

PURPLE CANE.

Prince, spoke of Purple Cane, and remarked that this, with Black and Yellow Cap, are the

only three raspberries in the world that root from the ends of the branches. To these, however, the President added the Cattawissa.

Prince, stated that the Purple Cane grows wild all over the North.

BARNETT'S RED ANTWERP.

Prince, stated that this variety is perfectly hardy—never winter kills.

Cultivation of Late Kinds for Market.

Cook, of Mass., inquired if any gentleman had found it an object to plant late bearing varieties for profit.

Barry, of N. Y., and Houghton, of Penn., could not recommend them for that purpose. The latter had tried them, under various systems of management, but had failed to get a perfect second crop, whether grown upon old or new canes.

Hovey remarked, that the Catawissa bears numerously in autumn, and the fruit is fine and delicious, but he thought people failed to appreciate fruits grown out of season.

KIRTLAND.

Elliott, of Ohio, thought this corresponded with one received from Mr. Allen, (of Buffalo,) and which he could trace back, as having gone from Cleveland, under the name of English Antwerp.

Blackberries.**CRYSTAL WHITE.**

Elliott, inquired if any one had fruited the Crystal White blackberry. He had not found it a strong grower, but more productive than the Lawton. A high flavored berry, but not good for market.

President had fruited it, and found it a vigorous grower—but thought it too soft for market.

HOLCOMB.

Dewey, inquired about the Holcomb.

President, thought it good.

Hovey, had found it a very fine fruit indeed;—in fact, the finest of the three blackberries. It is neither as acid as the Lawton, nor as sweet as the Dorchester. It changes its color slightly after picking as the Lawton does; but for its abundant bearing, and its hardiness, I should cultivate it in preference to either of the others for my own use.

Dewey and the President, concurred fully in the above remarks.

ROSE OF SHARON.

Breck, of Mass., had received plants under this name. Had found them strong growers, and found them disposed to sucker.

Hovey and Hyde had tried and rejected it for this reason.

CUT-LEAF.

Parsons, of N. Y., thought this superior in size, productiveness and flavor to any we have.

T. T. LYON.

Plymouth, November, 1863.

HOUSEHOLD WORDS.

For the Michigan Farmer.

"Mountaineers are Always Free."

[Motto of Western Virginia.]

BY L.

These glorious words are treason's knell,
 They clip its vulture pinion,
 And palay half its baneful power
 To curse the Old Dominion.
 Since thus her noblest sons have laid
 Their hands on Nature's Altar,
 And sworn to stand by human rights,
 Her traitors well may falter.
 Writ in lines of fire they see,
 "Mountaineers are always free."
 And to them each thrilling word
 Is as if their doom they heard.

Thy valiant children of the west,
 Virginia, mighty mother,
 Call to thee from the mountain heights
 Where brother stands by brother;
 They charge thee by thy radiant youth
 Renowned in song and story,
 And by the sons thy matron love
 Gave for thy country's glory.
 Cast the traitors from thy breast;
 Take this watchword of the west,
 Let it thy proud eagle be
 "Mountaineers are always free."

O honored once of all the land,
 But now despoiled with scorning,
 Redemption waits upon thy hills
 To crown thy night with morning.
 Thy mountain sons have caught the rays
 First o'er the darkness breaking
 Their welcome shouts come down the slopes
 The sleeping valleys waking.
 Cast the traitors from thy breast,
 Let this motto of the west
 Blazoned on each banner be,
 "Mountaineers are always free."

From Alleghany's laureled tops
 The winds are purer blowing,
 Adown the Blue Ridge, western slopes
 The streams are brighter flowing,
 And old Kanawha, mountain-born
 Shouts through his echoing arches
 As onward with resistless speed
 Roll freedom's joyous marches.
 O Virginia, catch the word
 Let the cheering song be heard
 From old Kanawha to the sea
 "Mountaineers are always free!"

Washington, D. C., Oct. 27, 1868.

In the Cottage by the Sea.

Childhood's days now pass before me,
 Forms and scenes of long ago,
 Like a dream they hover o'er me,
 Calm and bright as evening's glow;
 Days that know no shade of sorrow,
 When my young heart, pure and free,
 Joyfully hailed each coming morn,
 In the cottage by the sea.

Fancy sees the rose tree twining
 Round the old and rustic door,
 And below, the white beach shining,
 Where I gathered shells of yore—
 Heard my mother's gentle warning,

As she took me on her knee;
 And I feel again life's morning,
 In the cottage by the sea.

What though years have rolled above me,
 Though mid fairer scenes I roam,
 Yet I ne'er shall cease to love thee,
 Childhood's dear and happy home!
 And when life's long day is closing,
 Oh, how pleasant it would be,
 On some faithful breast reposing,
 In the cottage by the sea.

Courtesies.

William Wirt's letter to his daughter on the "small and sweet courtesies of life," contains a passage from which a deal of happiness might be learned:—

"I want to tell you a secret. The way to make yourself pleasing to other is to show them attention. The whole world is like the miller, at Mansfield, 'who cared for nobody—no, not he, because nobody cares for him.' And the whole world would serve you so if you gave them the same cause. Let everyone, therefore, see that you do care for them, by showing them what Sterne so happily calls the small courtesies, in which there is no parade, whose voice is too still to tease, and which manifest themselves by tender and affectionate looks, and little acts of attention, giving others the preference in every little enjoyment at the table, in the field, walking, sitting or standing."

It always delights us, as it often has and does, when stopping as a guest in some rural home for a night, to observe the children, as they get ready to retire for the night, kissing mother and father, sister and brother a "good night," sometimes, remembering him who tarries but for a night, with the dear and loved ones; and when they feel that they are too large to do this, they never forget to say "good night" on leaving the room; and such almost always remembering to say "good morning" on returning to the family circle again after the night's rest. Kindness and good willing in words and deeds everywhere and to everybody, ordinarily begets in return the same in kind from all whom you meet and with whom you mingle. Kindness begotten of love, is the higher law of social life; and the apostolic injunction, "Be courteous," should be obeyed by all. How soon it would dispel and drive far away all envyings and jealousies and bickerings in families and among kindred and friends and acquaintances.—Love and you will be loved; hate and you will be hated; for, like begets like oftener than is suspected.

To be angry is to be possessed of a demon. Regret will be sure to follow.

Duty makes life endurable; emotion makes it desirable.

HEALTHFULNESS OF WOOLENS.

BY J. R. DODGE.

The following advice in regard to materials for dress is from advance sheets of the Agricultural Report:

Not alone the casualties of textile production, and the accident of a military demand, but the peculiar sanitary propriety of the increased use of wool will tend to enhance the future consumption. Woolen is peculiarly the clothing of this climate, which is variable and changeable, subject to extremes of heat and cold, which can only be guarded against by changes of clothing to meet the ever-varying temperature, or by a constant use of woolens of different textures. Perhaps the latter course is the most healthful, economical and comfortable. So excellent as a non-conductor of heat is wool, that the uniform temperature of the body is less disturbed by atmospheric changes in the wearing of woolen clothing than in the use of any other material. The concurrent testimony of army surgeons upon this subject is emphatic and entirely conclusive.

Dr. Hall, in the "Journal of Health," counsels the use of woolens:

"Put it on at once; winter and summer nothing better can be worn next to the skin than a loose red woolen shirt; 'loose,' for it has room to move on the skin, thus causing a titillation which draws the blood to the surface and keeps it there; when that is the case, no one can take cold; 'red,' for white flannel fulls up, mats together, and becomes tight, stiff, heavy, and impervious. Cotton-wool more absorbs the moisture from the surface, while woolen flannel conveys it from the skin and deposits it in large drops on the outside of the shirt, from which the ordinary cotton shirt absorbs it, and by its nearer exposure to the air, it soon dries without injury to the body. Having these properties, red woolen flannel is worn by sailors even in the midsummer of the warmest countries. Wear a thinner material in summer."

The same excellent authority cites many points of efficacy in woolen fabrics for domestic, military and naval use. He says:

"Even in the hottest weather the entire clothing of the soldier should be woolen, this item is of immeasurable importance, and cannot be too urgently commended to the soldier's attention.—In midsummer, the cotton draws would be better; but as that involves a useless care of them for a greater part of the year, and as it is settled policy in war to be encumbered with as little baggage as possible, it may be as well to have the clothing of woolen."

"Just as Lord Nelson's ship was leaving Eng-

land, he discovered that the flannel shirts of the men were six inches shorter than they ought to have been, and refused to go until the proper kind were furnished. He was ridiculed and called 'an old granny.' The result was that while the rest of the fleet was decimated, he did not lose a single man! and his ship in efficiency was as good as any two others!"

The common observation of all nations leads them to give their sailors woolen flannel shirts for all seasons and for all latitudes, as the best equalizer of the heat of the body."

He gives the following reasons for wearing woolen flannel next to the skin in preference to silk or cotton:

"Because it is warmer; it conveys heat away from the body less rapidly; does it so slowly that it is considered a non-conductor; it feels less cold when it touches the skin than silk or cotton:

"If the three were wetted the flannel feels less cold at the first touch, and gets warm sooner than silk or cotton, and does not cling to the skin when damp as much as they do. We know what a shock of coldness is imparted to the skin when, after exercise and perspiration, a linen shirt worn next to the skin is brought in contact, by a shift of position, with a part of the skin which it did not touch a moment before, often sending a shivering through the whole system.

"Another reason why woolen flannel is better is, that while cotton and silk absorb the perspiration, and are equally saturated with it, a woolen garment conveys the moisture to the outside, where the microscope, or a very good eye, will see the water standing in innumerable drops.—This is shown any hour by covering a profusely sweating horse with a blanket, and letting him stand still. In a short time the hair and inner surface of the blanket will be dry, while the moisture will be left on the outside."

The following is translated from the French "Annales d'Hygiene":

"Diseases of the chest are early contracted exposure to the cold without sufficient clothing.—The greater portion of the children from one to fifteen months, who die in winter, are killed by the cold, or diseases resulting from cold.

"The use of woolen clothing in Winter is necessary to all, at least about the upper portions of the body; and even during summer when compelled by his profession to work in damp places, and exposed to currents of air, he should not wear light clothes, or divest himself of them while in a state of perspiration.

"Woolen stockings tend to a very considerable afflux of blood towards the calves of the legs, so that in a particular condition of health their use should at least not be desired, they should be

rejected during youth and manhood, but they are of highly valuable service in old age, because then the blood should be checked in its pressure towards the head, and old people generally can scarcely dress themselves too warmly.

"Woolen socks should everywhere be adopted, for cold feet are always almost the cause of catching cold, (catarrh) and an obstinate cough is often known to cease from the exclusive use of this sort of clothing, so essentially healthy.

"In regard to health, there is generally no risk in wearing warm clothes; on the contrary, they result in great advantage."

About Hoops.

The following sensible and timely remarks from the N. Y. Post, on those most comfortable articles of the female wardrobe, will be endorsed by all of our reasonable readers:

"It is desirable, we think, that the hooped skirt should continue to be worn; for, properly fastened with braces and suspenders, it is by universal evidence of women, convenient, healthful, and very much more pleasant and less straining to the frame, than any other contrivance of the female apparel.

With the old style of under garments—now it seems about to be re-introduced—the hips bore almost the whole weight of the heavy clothing worn by women. The strain was placed upon the weakest and most easily injured part of the body; and with numerous evil results, as any physician will certify—especially with married women, as this unnatural pressure is likely to cause the offspring to be weak and unhealthy, a consequence which can easily be avoided by wearing hoops if a fullness of skirts is desirable, with a good supply of flannel under-clothing next to the body in cold weather. Moreover, the hooped skirt is cool in the summer, and in the winter a weight of clothing can be worn with it, which certainly would be painful and injurious if worn without. Let women be sensible and look more to health and comfort, and less to fashion."

Punishment of Lazy Husbands.

In New Zealand the head chief often interferes in minor matters of a domestic nature. For instance, if a lazy fellow has a wife or two and a few children, and through his love of fishing, dancing, and loitering idly about, neglects to bring in the necessary supplies for his family, a complaint is made, the chief visits the house in person, and, if he sees just cause for punishment, he orders out the population of the village. Men, women, and children arm themselves with a stiff birch made of small canes, then form a long double line, about six feet apart, and await with anxious glee the approach of the delinquent. At

last he is placed at one end of the line, amidst a shower of yells, screams, jibes, &c. The word is given by the chief, and away he darts with the utmost speed through the ranks, every one trying to hit him as he passes. According to his deserts, he may get off with running the line once, or he may have to do so twice or thrice;—but he is skilled in cunning and fleetness that can run the line even once without having his skin tickled for him by a hearty application of the birch from some of the strong armed women!—As the punishment is not of a fatal kind, the whole affair creates an unrestricted merriment.—If the victim is a smart fellow he may escape with few blows; but if he is sulky, heavy, and dogged, he pays for it. Such a man comes off covered with welts on his bare skin from his head to his heels. For one month afterwards his family are provided for by the public at large, under the fatherly superintendence of the chief. At the expiration of that time, if he has all his domestic matters in perfect order, as a good father and husband ought to have, he again resumes his place in society, and shortly afterwards, perhaps, helps, with an experienced hand, to punish some one else.

HOUSEHOLD RECIPES.

As the cold weather has set in and every good housewife is preparing for winter, the following recipes may be found useful:

CANDLES.—Take of alum 5 lbs., dissolve entirely in 10 gallons of water, bring the solution to the boiling point, and add 20 lbs. tallow, boiling the whole for an hour, skimming constantly. Upon cooling a little, strain through thick muslin or flannel; set aside for a day or two for the tallow to harden; take it from the vessel, lay aside for an hour or so for the water to drip from it, then heat in a clean vessel sufficiently to mold; when molded, if you desire to bleach them, lay upon a blank by a window, turning every two or three days. Candles made strictly by the above recipe will burn with a brilliancy equal to the best adamantine, and fully as long.

MAKING LARD.—Cut the fat up into pieces about 2 inches square; fill a vessel holding about three gallons with the pieces; put in a pint of boiled lye, made from oak or hickory ashes, and strain before using; boil gently over a slow fire, until the cracklings have turned brown; strain and set aside to cool. By the above process you will get more lard, a better article, and whiter than by any other process.

MAKING SOAP WITHOUT GREASE.—One bar of common resin soap, 1 pound sal soda, 1 ounce borax—dissolve the soda and borax in 8 pints of rain or soft water; then add the soap, and boil until dissolved, when you will have, upon cooling, 10 lbs. of good soap, worth from 8 to 10 cents a lb., and costing only 1 cent per pound.

CHEAP SOAP.—Six lbs. sal soda, 4 lbs. lime, 4 gallons water; mix thoroughly; heat, but not to boiling, until the soda is dissolved; then after the undissolved portion of the lime has settled, draw off the clear liquid; to 7 1-2 lbs. grease, previously heated to melting, and the liquid by degrees, bringing to a boil upon the first addition, continue the boiling for 1 3-4 hours, then add 1-2 a pint of common salt and boil 15 minutes; set aside to harden. For complete success with the above, great care must be observed in drawing off the water from the undissolved lime, as the slightest quantity of lime in the soap will render it liable to crumble.

HARD SOAP OR SOFT.—Take good soft soap, any quantity you choose, bring it to a boiling heat, then add salt gradually, stirring it constantly till you observe it separate, something like curds and whey; then let it cool and you can cut into bars and take out, leaving the ley in the kettle. To purify it further, put the soap again into the kettle, and add an equal quantity of water, and for every 5 pounds of soap one-fourth pound of rosin; make it boil, and again add salt as before. When cold, cut it into bars and lay it up to dry.

A CHAMPION MATCHED TEAM.—Mr. J. H. Morris, of this city, has a pair of matched horses which it will trouble the world to beat. They were bred by Mr. Leonard Brownell, of Oxford, in this county, from a fine mare of his, whose blood and pedigree are unknown to us, and sired by a Morgan Black Hawk horse called "Kentucky Black Hawk." One of them was six years old the 26th of July last—the other 5 years old on the 25th or 26th of June last. They both stand 15 1-2 hands high, and weigh, one of them 1,060 lbs., the other 1,088 lbs. They are coal black all over with the exception of a white star in the forehead of each, of the size of a half dollar, and are as near alike in color, size, style, and action, seemingly, as ever two bullets were alike.

A gentleman who has resided much of the time in New York City for the past three years, declares this team to be better matched, every way than any he has yet seen there. At all events, they are beauties worth going no little distance to see, and a long distance to ride after. We are told that Mr. Morris has already refused \$1,200 for them, and we believe him wise in doing so, for there more money than that in them.—*Pontiac Jacksonian.*

The best time to yard sheep for fattening, or even store sheep, is when they do not improve on the pastures. There should be no loss of condition in the autumn or early winter, nor at any other time.

FLORICULTURE.

FLOWER GARDEN AND SHRUBBERY.

Continue to give attention to the lawn and walks, raking up all fallen leaves, and keeping everything neat. Give a dressing of old manure to the shrubs, and single specimens, which will also serve as a protection to the roots.

Hyacinths, Tulips, and other spring flowering bulbs, should all be planted this month.

Dahlias, still in bloom, as we write should be taken up, before very severe frosts.

Herbaceous Plants, of all kinds, should be taken up, divided, and reset. Protect with leaves, or strawy manure, before cold weather.

Rhododendrons, and other American plants, should have their roots well protected, with a good covering of leaves.

Hollyhocks should be protected in frames.

Daisies should have a covering of leaves, and boards, or sashes, to keep off cold rains.

Japan Lilies, and other lilies, should be planted this month. *Carnations* and *Picotees* should be transplanted to a frame, where they can be protected in severe weather.

Candies should be taken up immediately, and wintered in the cellar, out of the reach of frost.

Gladioli should be taken up, dried quickly, and placed away in bags.—*Hooley.*

Monroe Horticultural Association.

STIMULANTS—WHEN BEST APPLIED, ETC.

That there is a difference and distinction to be observed in regard to the manures most suitable to different plants, none doubt. Essays on the importance of this fact in Horticulture I have so often been presented to this Association, that we deem a recapitulation hardly necessary, particularly as our subject proper, limits us to the timely or untimely use of stimulants. Many of us no doubt often too highly stimulated our pet plants because of our own impatience at their steady yet slow growth while every additional drop of fertilizing matter rendered them less healthy consequently retarding their ultimate development. Perhaps there is no method of applying manures as beneficial, especially for a growing crop as liquid fertilizers, materials for which are within the reach of all, as house-sweepings, and ejops of all sorts, sweepings of the hinery, cleanings from the stable and cow yard, etc.

In preparing liquid fertilizers of the two last it is of sufficient strength when made in the proportion of four quarts of hen manure to twelve gallons soft water or four times the amount from the stable. The decoction should be well stirred, the first several times daily for four days and the latter, three times daily for two days, after which the sediment should be allowed to settle, leaving the liquid clear. All stimulants applied during drouth are of comparatively little value, especially if pressed on the surface, without removing the top soil and replacing it after the application of the fertilizer. In stimulating house plants we should be particularly careful to assist rather than to press nature; should we attempt the latter, our efforts will prove worse than abortive, resulting probably in ruin. Plants in a growing state are more capable of receiving and assimilating stimulants, than when growth is feeble, because the absorbing power of their roots and vital energies are at this time, the greatest. Give a feeble straggling plant food beyond its capabilities of digestion and you but add disease to its already enfeebled constitution, ending either in death or premature old age. When stimulants are applied judiciously, house plants are particularly benefited by them, but if once commenced it is highly important to continue the application until the plants show signs of rest or are reported at which time stimulants are not only unnecessary but absolutely injurious.

E. F. HASKELL.

Flower-Beds.

One of the last thought of things, too frequently, is to apply manure to flowerbeds. But it is scarcely less essential to a fine summer display, than it is to the production of fine vegetables; and certainly as necessary as to trees, or the lawn. Still it should be applied with caution. While a poor soil will only grow plants to a diminutive miniature size, which, though clothed with a profusion of small, starved looking blossoms make no show; a soil over rich will cause too great a luxuriance of foliage, which is always opposed to an abundance of bloom!

In most cases we prefer half-decayed leaves—where these could not be had we would use stable manure. The former spread over the soil two inches thick, or the latter one inch—would form a dressing which, in ordinary cases, should last two or three years. It is difficult to get flowers to do well in even the most favorable soil, if it is liable to hold water to constipation, in winter. Where flower-gardens or beds exist under such circumstances, advantage should be taken of the present season to have it thoroughly underdrained. It will be more beneficial in the end than the most judicious manuring; it is indeed in itself a powerful means of fertilizing the soil. Where circumstances render the draining of such places inconvenient, a temporary advantage can be gained by digging up the soil at this season very roughly, so as to expose as much as possible to the action of the frost. This is at best putting a patch on an old garment—an apology for the want of means to do better.

Luminous Plants.

Many flowers are phosphoric. The young daughter of Linnaeus was fond of setting fire to the inflammable atmosphere around the essential oil glands of certain fraxinella, and making a fine blaze on dark, warm, sultry summer nights. Pursuing her play she tumbled on a truth, and by some chance was led to observe the phosphorescence of certain flowers; the great naturalist being her especial point of observation. Since her time it has been found that most yellow or orange-colored flowers are phosphorescent, if watched in the twilight during July and August when the atmosphere is highly electric, and not a particle of moisture in the air. Among the most luminous are the sunflower [heliopsis]; garden marigold [calendula]; African marigold [tagetes]; the tuberose; and the orange lily [Lilium bulbiferum]; the brightest colors giving the highest radiance. This phosphorescence is not caused by luminous insects, as was proved by M. Hagger's microscopic examinations but at one time they were thought to be organic and not conditional. Other flowers besides those enumerated, are found to be phosphorescent. On the 18th of June, 1857, Fries, the Swedish naturalist, was walking in Botanic Gardens at Upsal, when he saw a group of poppies [Papaver orientale]—two or three out of the group—emit flashes of light. Many others observed the same thing, and the next day more than a hundred persons assembled here to watch the flowers give out flames.

So with the leaves of the American *Eurotia microcarpa* or evening primrose; so with the milky juice of certain plants, especially of the *Euphorbia phosphorea*, which, if broken in the dark and rubbed on paper, traces characters of flame of vast significance and miraculous import in the ages when the priests alone knew the secrets of nature. So one of the faint lilies of the pandanus or screw pine, the spathe of which enveloping the flowers, bursts with a loud noise, and sends out spark, as it bursts. The common potato, when decomposing, gives light enough to read by; a light so vivid, that, once, a cellar at Strasburgh was thought to be on fire when shining with the phosphorescence of decomposing potatoes.

A small moss, called the *Schistostegia Osmundacea*—like the royal fern, *Osmunda regalis*, in miniature—shines brightly in the dark; and the *Rhizomorpha*, humble little cryptogams which spread their thin dark roots abroad in cellars, and caves and mines, and on dark walls, have such a bright phosphoric light that they have been spoken of enthusiastically as the "vegetable glow-worms." In the caverns and granitic underways of Bohemia, the *Rhizomorpha* often give light enough to read by; so they are said to do in the English coal mines; but no where are they so brilliant or beautiful as in the mines of Hesse, in the north of Germany, where they shine like bright moonlight through the galleries. A very beautiful fungus, the fire mushroom, or *Fungus igneus* grows with a steady light when decomposing. This phosphorescence of some of the *agaric* tribe was first seen at Amboine, but afterwards in the Brazil, in an *agaric* which grows on the dead leaves of the *Pindoba* palm—the *Agaricus Gardneri*, so named from its discoverer. Also in a magnificent species to be found in the Swan River colony. Another mushroom, growing at the foot of the olive tree in Italy, *Agaricus clearyi*, gives a blue light at night; and he parasitic *Byssoid* fungi, which penetrate the tissues of su-

perior fungi and of decayed wood, send their delicate filaments through and through the rotting fibres, especially of the willow, and make the whole mass alight with phosphoric glory. It is only the filaments of the mycelium, though, which are phosphoric; the perfect plant of a fine blue color, and known as the *Thiophora caerulea*, is nothing more than blue and beautiful; it is not a light-bearer.—*All the Year Round*.

Cultivation of Hyacinths.

BY J. M. THORBURN.

The preferable season for planting Hyacinths in the open ground is in October and November, but they can be set out at any later time, as long as the ground is open and the Bulbs remain sound.

The best compost for the Bulbs is the following: One third river or sea sand, one-third well-rotted cow manure, and one-third good garden mould. The beds composed of the above compost should be well dug, to the depth of fourteen inches, and raised from two to four inches above the level of the walks, and in very severe weather may be covered with withered leaves, straw, or with light earth formed of decayed leaves from the woods. They should be planted about four inches deep, and from six to eight inches apart.

For the culture of Hyacinths in pots prepare the above compost, adding, if possible, a quantity of leaf mould. The most favorable time for planting is September, October and November. The size of the pots depend upon the number of Bulbs, planted in a single one; three or four Bulbs in a pot of six or seven inches in diameter, has a rich and massive effect; one or two Bulbs in each may be planted in proportionately smaller pots—two Bulbs in each is very effective, and generally preferred.

In potting, each Bulb should remain two thirds above the surface of the soil; when thus planted, water them well to imbed the Bulbs firmly within the soil, allowing them to remain in this condition for one or two days, then bury the pots in the open ground to the depth of six inches for six weeks, in which position the preparatory root-growth is made, necessary to a vigorous development of their flower scapes. After the period adverted to, take up the pots and remove them to a green house, or a room where fire is usually made, care being taken to screen the leaf-growth, made in darkness for a few days after being disimbedded. They will need moderate occasional watering, until they begin to grow, when they should have an abundance of air in mild weather, and plenty of water from the saucers whilst in a growing state.

For culture in glasses, the Bulbs should be so placed that only the base of each touch the water, then place them for the first ten days, in a dark closet or room to promote the shooting of the roots, after which expose them to the light and air as much as possible; the water should be changed as it becomes impure; draw the roots entirely out of the glasses, rinse off the fibres in clean water, and wash the inside of the glass well. The water should never be allowed to freeze, as it would not only burst the glass, but cause the fibres to decay. Single Hyacinths generally succeed better in glasses than Double ones.

Hot-House.—The temperature should at this time be carefully attended to, never being allowed to go lower than 50° and it ought not continue long at that point, 25° being preferable. The shutters should be on this at nights as soon as there is any appearance of frost, and removed every morning. On days when the atmosphere is mild and the sun's rays have any effect, air may be admitted in moderate quantities, care being taken, however, that the temperature of the house be above 60° previous to admission. The sashes should be closed early in the afternoon, or at any time when the weather changes suddenly.

The water used in watering the plants should be of the same temperature as that of the house—and should be applied gently.

NATURAL HISTORY.

The Mountain Ammiss.

A correspondent of the Portland [Oregon] Times, writing of this comparatively but little known animal, which may be interesting to our readers, from Bannock City, in the Boise mines, Idaho territory, tells the following story:

A terrible fight between a mountain ammiss and a grizzly bear was witnessed by a small party of mountaineers a short time since, on the road leading from here to Lewistown. The party had stopped to camp for the night, when suddenly wild and terrific screaming and fearful sounds burst upon their ears, indicating a deadly combat between two forest monsters. The scene of action was near, but out of sight. The party were silent listeners during the desperate conflict, the sounds of which struck terror to the stoutest hearted mountaineer. Finally the sound died away—the conflict was ended. An hour of silence elapsed, and the party ventured slowly and cautiously toward the spot, from whence those doleful sounds enunciated. As they neared the spot, the victorious ammiss passed before them into the jungle. On coming to the place of the deadly struggle they found dead and bleeding a large she bear, that would weigh probably 900 or 1000 pounds.

The grizzly was bitten through and through the neck, and fearful gashes were inflicted on the body, laying bare the ribs and shoulder blades, surpassing the effects of repeated strokes from a heavy cutlass or bowie knife. It seems that the ammiss desired to make a meal of the cub, to which the she bear objected, hence the fight ensued; and it was such a fight as mortal men scarcely ever witnessed, and none but bears and lions participate in. The mountain ammiss is an animal half way between an African lion and Bengal tiger. It is described by a mountaineer as follows: "His form is much like the lion, being very heavy before and light behind, with a perfect lion's tail, but lacking the mane, though the hair forward on the neck was longer than on the rest of the body; has a round ear, dark streaks around the eyes and up and down the face, also running down the legs. The body is some darker in color than that of the lion, and free from stripes. His foot is a lion's paw. This beast of prey has lately been discovered in these mountains, and the ammiss is a wonderful animal—no doubt the king of beasts in the forests of Idaho. When his angry voice is heard, the beasts of the forests crouching seek their hiding places."

A Monster of the Deep.

In some parts of the ocean there are enormous sea animals called "Sepia," which are a sort of polipy. They have very long legs, and are said sometimes to seize upon the coral divers along the coast of Italy. Mr. Beale tells us of the following adventure with a creature of this sort.

While upon the Bonin Islands, searching for shells on the rocks which had just been left dry by the receding tide, I was much astonished at seeing at my feet a most extraordinary-looking animal crawling towards the retreating surf—I had never seen one like it before. It was creeping on its eight legs, which from their soft and flexible nature bent considerably under the weight of its body, so that it was lifted by the efforts of the tentacles only a small distance from the rocks.

It appeared much alarmed on seeing me, and made every effort to escape, while I was not much in humor to capture so ugly a customer, whose appearance excited a feeling of disgust, not unmixed with fear. I, however, endeavored to prevent its escape by pressing on one of its legs with my foot; but although I used considerable force for that purpose, its strength was so great that it several times quickly liberated its member. In spite of all the efforts I could employ, in this way, on wet slippery rocks. I now laid hold of one of the tentacles with my hands and held it firmly, so that the limb appeared as if it would be torn asunder by our united strength. I gave it a powerful jerk, wishing to disengage it from the rocks to which it clung so closely by its suckers, which it effectually resisted; but the moment after, the apparently enraged animal lifted its head, with its large eyes protruding from the middle of its body, and, letting go its hold of the rocks, suddenly sprang

upon my arm, which I had previously bared to the shoulder for the purpose of thrusting it into the holes in the rocks to discover shells, and clung with its suckers to it with great power—endeavouring to get its beak, which I could now see between the roots of its arms, in a position to bite.

A sensation of horror pervaded my whole frame when I found this monstrous animal, for it was about four feet long fixed so firmly to my arm. Its cold, slimy grasp was extremely sickening, and I immediately called to the captain, who was also searching for shells at some distance, to come and release me from it by taking me down to the boat, during which time I was engaged in keeping the beak away from my hand. He quickly released me by destroying my tormentor with the boat-knife, when I disengaged it by portions at a time. This animal was the species of "Sepia" which is called by whalers "rock squid."

From Wilkes' Spirit of the Times.

CROCODILES ON THE WHITE NILE.

Our boat was made fast under the village of Subchaya, and not far from it was the house of our conductor, Saleh Wallad Omar Abt el Samad—according to his own account a keen sportsman, who, disdaining agricultural pursuits, supported himself and family by the produce of his gun and spear. Six years ago, in company with three of his fellow villagers, he went to a small island called Geizet el Arab, a choice resort of crocodiles, in search of their eggs. Going the round of the island three crocodiles escaped into the river, and on closely investigating the spot, a quantity of eggs were discovered in the sand. No sooner had they made off with their booty in the direction of a small tent, which they had pitched, than a crocodile, having watched their proceedings, rushed to the place of her deposit, and as rapidly returned to the river; and, swimming, followed them opposite to their destination, where until nightfall her eyes were perceptible above the water. Their repeat that night was a rich one; but as soon as the last embers of their fire had died away, the crocodile charged them furiously, repeating her attack several times during the night, and it was only by the frequent discharge of their firearms that they kept her from closing upon them. From that time the crocodile, hitherto harmless, became furious, and fell upon all the cattle it could catch upon the river side. Among many victims was a fine mare belonging to an Arab in the village of Nega el Arab, half an hour's walk from the river. The mare, as is usual, was allowed her freedom to graze in the coarse abundant pasturage; and, whilst drinking, was suddenly seized in the back of the neck by the jaws of the crocodile. The mare being an animal of great power, in an agony of pain, violently threw up her head, and with it the crocodile, which dropped on her back, and with her unwonted burden, she galloped off to her stable. The astonished villagers belabored the crocodile so heartily with their "naboot" (stout sticks, common to every Fellah), that it was soon induced to let go its hold and dismount; but the mare died from the joint effects of its wounds and the fright.

The breeding season of the crocodile takes place during the low stage of the river in March, and they deposit their eggs in the sand on the banks, or, in preference, in small sandbanks, or island in the stream. The eggs are white, hard, and in size not unlike those of a domestic goose; the exact measurement of one I found in the Nonsour country, on the White River, being 3½ inches in length, and 5 13-16 inches in circumference. Cuvier observes that, of all animals, the crocodile attains the greatest dimensions, considering its size at birth.

Fearful combats take place between the males for the females the largest and most powerful one invariably monopolising the latter in his district.

When about to lay, the female crocodile, having made choice of a spot, will dig with her claws in the sand a hole about six inches deep, drop her egg therein, and carefully cover it. She will then proceed to make several similar holes around the first, in order to mislead any one in search of her treasure. Daily she will contribute one egg to her store, at the same time carefully widening the excavation, turning the eggs, and recovering them with sand. Unless disturbed, she will lie near or over them, and leave them but for a short time to feed in their close vicinity; and she will even then watch them zeal-

ously by raising her head to the surface of the water, and occasionally run towards them at short intervals, to satisfy herself that all is right, and return to her feeding ground. The quantity of eggs depend upon the age and size of the animal, and vary from forty to sixty.

At the commencement of the hatching season the nest is widened to accommodate the eggs, being arranged close to each other, and equi-distant from the surface. A slighter covering is now placed over them, so that incubation, by means of the sun's heat, may take place. During this stage the attention of the animal towards her eggs is redoubled in watching and turning them; and it is dangerous for a single person to approach the spot, as she will fearlessly attack and give chase at considerable speed. After such a circumstance, or if on her return from feeding, she should discover traces of man or beast in the vicinity of her charge, the wary crocodile will decamp with her eggs in her mouth, and seek for another locality.

From various sources I am informed the hatching time takes ninety days, therefore it is during the first increase of the Nile that exclusion takes place. The mother, then carrying off her young in her mouth, will place them in the shallow water of some retired creek, or in a crevice in the bank, where she will nourish them until able to accompany her, and prey upon small fry for themselves.

It is well known that these reptiles, although they seize their prey under water, cannot under the same circumstances swallow it, and must proceed to shore for that purpose, where, resting on their forelegs and the head out of water, they are enabled to feed. Large animals or man, when caught, are retained under water until putrefaction commences, before they are devoured.

Men who in Egypt devote much of their time to the destruction of these animals, like our friend Saleh Abtil Samad, throw up low embankments, twenty or thirty yards from the river side, in localities where they delight to bask in the sun. A few days suffice to accustom the wary reptiles to the new objects, and, lying close in ambush behind one or the other, the skilled hunter seldom passes a day without a shot. Swimming lazily towards the shore, with the tip of the nose and eyes only above the water, a careful survey is taken before the crocodile ventures to expose itself on the land; then, sometimes lingering on the water's edge, at others taking a short run, the reptile will cast a hurried an uneasy glance around, and seeing nothing to fear, will lie down, but will for some time retain its head elevated on the watch. Gradually overcome with sleep, by the influence of the sun, the head at length drops, until prostrate upon the sand. Saleh, who has been narrowly watching the above proceedings from behind his bulwark, and whose nerves have been as irritable as those of his unconsueted prey were tranquil, fires, and if fortunate enough, to plant his ball in the brain, the crocodile, after a twitch or two of the tail, remains on the spot; but if, although hit hard, that organ has remained intact, the crocodile attempts to escape, pursued by our hero, who seizes the tail, and lifting its extremity as high as possible from the ground, thus rendering the animal powerless, so succeeds in arresting its progress for a second, until a companion shall have battered in its skull with an axe.

This, Saleh admits, is dangerous work; but practice makes perfect. If the wounded animal is conscious of his approach, the tail is instantly curved to receive him. Placing himself within the arc described by it, he escapes injury; but if on the wrong side, a blow from it might be fatal.

The negroes spear and catch crocodiles with baited lines, and on our subsequent progress through the Shillook, Dinka and Jangal districts, we have picked up several of these lines, which, in lieu of a hook, are armed with a piece of hardwood, a foot in length, pointed at each end, and attached in its centre to the line. A fish, bird, or flesh or entrails of any animal, serve for a bait, and when, as usual, greedily taken, the short line is torn from its slender fastenings on the bank; but a float indicating its whereabouts, the negroes pursue in canoes and spear the crocodile.

What strange things sometimes happen! On the 21st April, in company with three other boats belonging to our expedition, we were becalmed, and were towing with great difficulty

among the rank high reeds on the western bank, in the Nouse district. Whilst I was employed in writing the above from my notes, one of our sailors, in swimming on board, and when with, in a couple of strokes only from the boat, was seized by a crocodile, and instantly drawn beneath the water; which caused great consternation, to our crew, he was a general favorite, and the men cried as only Arabs can; but no vain effort accompanied their grief, every cheek was wet. My wife and self regretted him more as a dear friend than as a subordinate. So willingly did he always set about his work, and so proud was he of praise, that he had quite won our hearts. Nature, too, seemed to sympathize, for long-threatening rain came down and contributed its mite to the sadness of every one on board.

Two days have passed, and again the buoyant spirits of our crew and soldiers are uppermost. In the meantime, many a sad tale of hippo's or crocodile's transgressions have been related; not a year passes without such incidents. Two years ago our rais, or captain, lost his brother, and twelve other victims were preyed upon from different boats by a well-known crocodile frequenting an island in the neighborhood of Gondocoro. No shot, it is said, will touch him; and so fabulous are the tales of his size and audacity, that, opportunity serving, I am inclined to try the effect of one of Holland's rifles on him.

JOHN PETHERICK.

The Nouse Country, White Nile, April 24, 1863.

European Method of Picking Grapes for Choice Wines.

The superiority of these choice wines made in European countries depends in a great measure upon the care and attention bestowed upon the vintage and the treatment of the wine. In order that the grapes may have sufficient time to ripen thoroughly, the vintage or harvesting is delayed usually till November, often waiting till cold frosty weather, gathering those, however, which are fully ripened as often as necessary. The perfectly ripened grapes only are put into the press. Dry and fine weather is required for picking, and as only the ripe ones are picked, many vines receive as many as four pickings. The finest of the choice wines are made from the best grapes selected from the most favorable situation, cut from the vines with scissors, carefully handled and pressed separately after lying twenty-four hours.

The celebrated Tokay wine is made from what are called "dry berries," that is, grapes which have almost become raisins before being picked from the vine. As soon as dry berries begin to show themselves, the opening vintage begins, and intelligent proprietors gather under careful supervision the best dry fruit from day to day, deferring the main or general vintage as long as possible, in order to obtain a greater quantity of such berries.

At the general vintage shortly following, the gatherers form a line, advancing equally, each provided with a wooden hand-tub, to contain the common grapes, and a smaller wooden vessel, fastened to the body, to receive the dry berries still picked from the clusters. The gatherers are followed by an overseer, who sees that no grapes are eaten, and who from time to time, through one of the carriers, collects the dry berries already

picked and deposits them in one of the vats until wanted for pressing. He also takes care that the gatherers advance in regular order, so that no vine be passed by, and that the berries fallen off are carefully picked up. That no dry berries may be lost, the clusters, before being conveyed to the press-house, are subjected to another examination. For this purpose large tables are placed outside of the vineyard, on which the grapes are spread and searched by children for dry berries, who at the same time remove all the dried, rotten berries. In this second picking during the principal gathering, the fresh grapes are gently put into the tubs, since if crushed or bruised by being spread upon the tables great losses would be the result.

The gatherers are strictly forbidden to eat any grapes, either in the vineyard or press-house, under the penalty of loss of wages and future employment.—*Maine Farmer.*

DOMESTIC ANIMALS.

For the Michigan Farmer.

DOMESTIC ANIMALS.

BY SLOW JAMIE.

No. 10.—The Ass.

We come now to that slow moping stupid animal whose name has become a synonym for dullness. He resembles the horse in all points except that he is dull in expression, coarse in his points, small in size and slab-sided. He is possessed of great strength for his size, but he is provokingly slow in gait. Also drivers generally waste a great deal of labor in beating their animals. If they suffered them to take their own pace they would make two miles an hour. With the utmost abuse they seldom go faster than two and a half so that there is little.

Nevertheless this poor beast has many generous qualities. Although slow to learn, yet with care he will take as much training as a horse. Take him over an unfrequented road or where there is no road at all, and he can retrace his steps with ease. He is capable of strong attachment. The fidelity of the ass to his master, the ardor of the male for the female, the affection of the dam for her young, is remarkable.

The half starved donkey which carried a crippled beggar from door to door is faithful to his master, although receiving neither food nor shelter for his labor. The poor man lodges at night with some family almost as poor as himself, the beast is turned out to browse on a prickly thistle or thorn bush. Should some mischievous boy think to get a ride, the animal will kick him off, but when the beggar mounts him in the morning,

he trudges along quietly all day till the return of evening allows him to pick another meal. Should the man get sick and fall from his back as sometimes happens, the poor beast will not leave him, but graze till he gets up again, or if he die by loud and repeated braying attract the attention of strangers to the spot.

We are told that in the east asses are of a much better quality than in Europe or America, and it is likely that they suit a hot climate better than a cold. The Bible speaks of them being much used for riding even by the rich. Still we can gather that even in those times and countries, patience was their prominent quality—every child knows the story of an angel reproving Balaam for beating his ass. Nor should we forget the ass whose rider was torn by a lion, which stood by the corpse until they came and took it up for burial.

In all steep mountainous countries the ass will be necessary to man. He is temperate in his food and drink, he can bear exposure and fatigue, he can climb steep craggy paths where the horse would never go, and carry great burdens up and down them. But for the ass and mule a considerable of Spain would be worthless. Everything is good in its place.

The Rich-Paular-Merinos.

Mr. Charles Rich, of Lapeer county, in this State, is possessor of a part of the flock of pure bred Paular Merinos that is thus described in the work on sheep recently issued from the press, and which we have noticed on another page. We cite the description, to show that here in Michigan we have some of the finest and purest bred fine wools that can be had any where.

"THE PAULAR OR RICH MERINOS.—These sheep were originally purchased in 1823, by Hon. Charles Rich, M. C., and Leonard Bedell, of Shoreham, Vermont, of Andrew Cock, of Flushing, Long Island. Cock purchased all of the original stock and part of the individual sheep sold to them, of the importers. Their Spanish pedigree, the authenticity of which was attested by a Consular certificate, (undoubtedly Mr. Jarvis', but that fact is not now remembered,) showed them to be Paular. They have been bred by John T. Rich, son of the preceding, and his sons John T. and Virtulan Rich, on the old homestead in Shoreham, down to the present day, without the least admixture of other blood than pure Spanish, and with very little crossing with other Spanish or American families.

These sheep, in 1840, were heavy, short-legged, broad animals, full in the quarters, strong-boned, with thick, short necks and thick coarse heads.—The ewes had deep and sometimes plaited dew-

laps and folds of moderate size about the neck.—The rams had larger ones. They were darker externally than the Jarvis sheep, but not so much so as the Atwood sheep—indicating that their wool contained more yolk than the former and less than the latter. The wool was longer than that of either of the other families, very thick and covered them better on the belly, legs and head. But it was inferior in fineness, evenness and style. It was quite coarse on the thigh, and hairs were occasionally seen on the neck folds.—The lambs were often covered with hair when yearned, and their legs and ears were marked by patches of tan color which subsequently disappeared except on the ears, where it continued to show faintly. They were better nurses and harder than either of the other families. I have remarked in a former publication that “they were precisely the negligent farmer’s sheep.” They encountered short keep, careless treatment of all kinds, exposure to autumnal storms and winter gales, with a degree of impunity which was unexampled. Their lambs came big, bony and strong, and did not suffer much if they were dropped in a snow bank.

In 1842 and 1843 this flock was bred to a Jarvis ram—peculiarly dark, thick and heavy fleeced and compact in form for one of his family—the object of Mr. Rich being to avoid breeding in-and-in and to improve the quality of his wool. For the same object, and to increase the yolkness of the wool, a dip or two of Atwood blood has been since taken; but has always been made a point to *breed back* after taking these crosses, so as essentially to preserve the blood and distinctive characteristics of the original family. The Messrs. Rich have succeeded in all these objects and have kept up well with the rapid current of modern improvement. Their sheep are not so large, nor do they yield so much wool per head as the improved Infantados, but they possess symmetrical forms which are remarkable for compactness.

The body is shortish, and very thick, with their ancient good fore and hind quarters; and their heads, though thick and short, have lost their coarseness. Their fleeces are even and good. But that merit which gives them their great popularity in Vermont and elsewhere is their adaptation to thin, scant herbage, and to their qualities as “working flocks.” They demand no extra care or keep to develop their qualities, are always lively and alert, and though gentle and perfectly free from restlessness of temperament, they are ready to rove far and near to obtain their food.—And for all they consume they make the most ample returns. While they will pay for care, they will thrive with but little care. In a word, they remain, par excellence, the negligent farmer’s sheep.”

AYRSHIRES.

BY FRANCIS M. ROTCH.

This variety of cattle comes within our definition of a *breed*, having been produced by a proper selection and crossing within the last 75 years, and here we cannot help digressing an instant to remark that those who advocate establishing a breed of cattle from our own “natives” by selection and care, little estimate the labor of the work they propose, rendered even more difficult in our case by the heterogeneous mass of mongrel blood composing the material out of which we have to mould our improved breed. The defects that are to be removed, and the good qualities that are to be increased and rendered hereditary, the unexpected faults that will continue to crop out from the want of any strong predominant strain of blood to overcome them, will make the task so arduous that any one having a true conception of what was to be accomplished and through what obstacles, would never advise this mode of proceeding. Almost a hundred years have been required to bring the Ayrshires to perfection, and yet the originators of that breed had, as we shall see, a far more uniform material from which to establish it, and did not hesitate to employ crosses of the improved breeds to attain their end. The true way to ameliorate our “natives” is by crossing with some one of those breeds already approaching perfection. By this means we turn to the best account the want of hereditary qualities, this very defect fitting them especially to receive the impress of the pure race. One single cross of a pure-bred animal would do more towards their improvement than years of selection and breeding among themselves. But to return to the Ayrshires.

They are named from the country in Scotland where they originated and are chiefly bred. It is a high exposed region of cold clay soil, with bleak hill-sides, and vast tracts of moorland, covered with heather, the resort of the grouse and other kinds of game. The climate is mild and damp; grain growing is little practiced, but the attention of the farmer is principally turned towards the dairy as a source of profit. In perfect keeping with this description of land is the hardy little Ayrshire, their breeders having discovered the great secret of success in thoroughly adapting the animal to the locality and climate where it is to live, as well as to the purpose for which it is to be kept. The origin of this breed is, even at the present day, a matter of uncertainty. Little else is known beyond the fact that there was in Scotland a breed that though bearing little resemblance to the improved Ayrshire of the present day, might have been their progenitors. Mr. Alton, in his treatise on the dairy breed of cows, thus describes the Ayrshire cattle of seventy years ago. “They were of diminutive size, ill-fed, ill shaped, and they yielded but a scanty return in milk; they were mostly of a black color, with large stripes of white along the chine or ridge of their backs, about their flanks, and on their faces. Their horns were high and crooked, having deep ringlets at the root, the plainest proof that the cattle were but scantily fed; the chine of their backs stood up high and narrow; their sides were lank, short, and thin; their hides thick, and adhering to the bones; their pile (hair) was coarse and open, and few of them yielded more than three or four Scotch pints (a Scotch pint is two English quarts) of milk per day when in their best plight, or weighed, when fat, more than from twelve or sixteen to twenty stone avoirdupois, sinking off,” (about 200 to 300 pounds to four quarters.) From this description it is evident that a long course of selection, and better feeding and keeping must have been resorted to, guided by no ordinary skill and perseverance, to have produced the present class of stock, the true type of a dairy breed. We may well doubt, also, whether these means alone could ever have effected the entire change in appearance and thrift from the old breed without assistance from crosses of foreign blood. The color, the horns, the large bellies, &c., could scarcely have been so entirely changed without some admixture of blood, and tradition points to the Holderness as having been one source of the improvement; whilst the Jerseys are also supposed to have lent their aid to the increase of its dairy qualities. We ourselves incline to the opinion that the Holderness or Teeswater was the cross employed to effect the object.

Yonatt says: "In many a district the attempt to introduce the Teeswater breed, or to establish a cross from it, had palpably failed, for the soil and the climate suited on y the hardihood of the Highlanders; but here was a mild climate, a dairy country; the Highlander was, in a manner, out of his place; he had degenerated; and the milking properties of Houlderness and her capability of ultimately fattening, although slowly, and at a considerable expense, happily amalgamated with his hardihood and disposition to fatten, and there resulted a breed bearing about it the stamp of its progenitors, and, to a very considerable degree, the good qualities of both." But let the cross have been what it may, the result is most satisfactory; and the characteristics imparted by it are now so firmly fixed in the improved breed that they can be depended upon to transmit their properties to their off spring, and this test of a true breed they have now stood for many generations, establishing themselves as a distinct breed. They have deservedly attained the highest position as dairy animal, and as such have spread into many parts of England, and in small numbers have been imported into this country. Mr. Prentice, of Albany, and Mr. Brodie, of Jefferson county, New York, have imported Ayrshires, and quite a number have been brought into Massachusetts, where they have attained considerable popularity.

The Scotchman's beau ideal of an Ayrshire was gathered from personal observation and conversations with some of their principal breeders, during a residence of some months in the country, to be as follows: The head must be small, light and bony, the eye bright, and the horn white, with a dark tip, and upturned. The neck must be very thin and light, as indeed the whole fore end must be. The shoulder must lay flat and form a plan with the flat fore-rib and the neck; the point must not project. The posterior ribs must spring well from the backbone, and give ample room for the large rumen and intestines; the stomach, in this breed often seeming wholly out of proportion, but the Ayrshireman admires a big belly as the laboratory where the secretions are rapidly and properly elaborated, and where the stock of food is converted into milk. The loin must be broad and form well on with the wide hips and the capacious pelvis, the whole frame thus forms a true wedge with the point at the shoulder. The rumps are wide and tolerably high, the tail long and slender, the legs straight, the thigh rather thin, and the udder or "vessel," as they term it, must be large and broad, extending well forward with thin flexible skin, and teats wide apart and short. The offal is small and the weight of the whole animal does not average throughout the country over 500 pounds. The colors must be red and white, splashed and blotched, not running into each other, and becoming roan, as in the short-horn, but with clearly defined edges; the white portion is often flecked with the darker color. Black and white is not uncommon, but is not liked; the darker the red, even becoming deep brown, the more fashionable just now. The skin must be thin and loose, the breed having no great pretensions to hardiness, and the hair soft and woolly. Everything of the carcass has been sacrificed to the udder and belly, the breeder evidently believing in "no udder, no cow."

Perhaps no breed affords a better illustration of the power of the breeder by care and design to develop a peculiar property in an animal at the expense of all the other qualities. Among the Ayrshire breeders any animal showing a disposition to feed instead of to milk is immediately disposed of, and even those bulls are preferred having the most feminine character about the head. The system of keeping and rearing also conduces to increase their disposition to milk. The calves are never allowed to suck their dams, but are fed new milk for five or six weeks, at the end of that time it is gradually diminished for two or three weeks longer, when the calf is left to shift for itself. After the first year the heifers are generally turned upon the poorest, coarsest pasture on the "mour-edge" where the sedge grass contains so little nutriment that to satisfy their hunger they are obliged to consume a large quantity of it; this bulk of food of course enlarges the paunch, distending its walls and the belly plates of the young animal, and producing the large belly the Ayrshire farmer so values. The heifers usually calve at two and a half to three years old

though some are in milk at two years old. The usual yield of the cow is from thirty to fifty pounds of milk per day, producing in the season about one hundred and fifty pounds of butter, or "her own weight" in cheese, as the phrase is; though we think three hundred and seventy-five to four hundred pounds would be nearer the average. Yonatt, in his account of the Ayrshires, gives much greater products as being obtained, and no doubt instances are found of such extraordinary yields. We quote a few of his figures: "An Ayrshire cow may be reckoned to yield two hundred and fifty-seven pounds of butter per annum, or five pounds per week, all the year round." Six hundred and fifty gallons of milk is called an average yield of a cow, making four hundred and thirty pounds of cheese, or one hundred and seventy-five pounds of butter. This was the average of a herd kept near a town, and highly fed and well cared for, and this would, no doubt, exceed the average of dairies. Thirty-six quarts per day have been milked from a cow, and twenty-eight quarts from a three-year old heifer, and this last for six weeks after calving. Though this breed are chiefly celebrated for the dairy, the oxen work kindly, and the steers can be turned off at three years old, weighing seven or eight hundred pounds. Curiously enough, there seems a lurking tendency in them to fatten, whether resulting from the short-horn cross, or from their natural vigor, it is impossible to say, but it is certain that when transferred to the fertile pastures of England they often loose, in a degree, their extraordinary milking property, and begin to lay on flesh, and the time of their remaining in milk is shortened when removed from their native pastures. They have never been great favorites with the butcher, as the $\frac{A}{H}$ quarter is usually light; their fat is mingled with the flesh rather than separated in the form of tallow.

Few experiments that we are aware of have been made in crossing the Ayrshires. Some breeders are of opinion that a cross with the short-horn may be made with advantage, giving earlier maturity and size without loss of milking property, and the appearance of some of the improved herds in Ayrshire would lead us to suppose the experiment had been tried there. We have seen animals among them so square and broad, even in the forequarter, as to resemble miniature short-horn. But the cross is not acknowledged, and the opinion therefore needs confirmation. With our native stock the Ayrshire has been crossed with success, an admirable, hardy dairy cow being the result; in confirmation of which we give the statement of Mr. Brooks to the Massachusetts Board of Agriculture, in presenting four grade Ayrshire cows for premium as a dairy herd. In twenty days the four cows gave 3,075 $\frac{1}{2}$ pounds of milk, being an average of 768 $\frac{1}{2}$ pounds, or 38 $\frac{1}{2}$ pounds per day from each cow. From the milk 129 pounds of butter was made, being an average daily yield of 161 pound per cow. The per cent of butter in the milk was 4.176; the live weight of the four cows was 4,122 pounds; and the daily yield of milk 3,789 per cent on that weight! Several of the large dairies in Delaware county, New York, a county chiefly devoted to butter-making, and yearly increasing in reputation and wealth from that course of farming, have used Ayrshire bulls in their herds with manifest advantage, the progeny giving an increased quality and quantity of milk, and at the same time, not growing too large a frame or too great a weight for the steep, rocky pastures where they feed. The cross is growing in popularity, and we are informed by a gentleman who has sent Ayrshire bulls into the county that the demand for them steadily increases. To such dairy districts as this either the pure-breds or the grades are admirably adapted, and, with proper treatment and not too much indulgence to the pure race, they will retain their milking property as well as in their own country. The milk of the Ayrshires is remarkably rich in casein and good in butter, though yielding in this last respect to that of some other breeds.

Lice on Stock.

A farmer of much experience gives the following remedy for lice on calves and other stock:—One quart fine salt dissolved in three quarts buttermilk. Wash quite thoroughly once or twice. It has never failed to be effectual besides giving the hair and skin a fine appearance.

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Training Cows and Steers.

The *Maine Farmer* has an interesting article on this subject, from which we make a few extracts:

"All domestic animals require some sort of training or education—some more, some less, according to the usages to which they are put. Thus the cow is required to stand quietly while you are milking, and to "hoist" the right foot and place it back of the other, in order to give you more room to use your hands in milking. This is generally the extent of her schooling; but if she be taught to allow herself to be lead by the horn, gently and peaceably, it would add to her value and the ease of her management. For steers, there are higher branches of *practical studies* into which they should be initiated. Their duties and labors under the yoke on the farm and on the road are of the utmost importance to the farmer, and it is incumbent on him to teach them in the most effective, thorough, and at the same time, kind and pleasant manner. There is a great difference in the teachers of this kind of science, as well as in the fourfooted pupils to be trained. Some teachers that we have seen "breaking steers and cows," as the phrase is, did not evince half as much good sense and discretion as the cattle they undertook to train. On the other hand, there are some cattle so naturally crabbed and preverse in disposition, that kindness and gentleness seem to be entirely thrown away upon them, and they require at least something as stringent as the hampering and casting down of Rarey's method, before they will be convinced that there is a power above them to which they had better submit. This most generally displays itself in those cattle which have been suffered to go unmolested and have their own way until they have nearly or quite obtained their growth.

The best mode and manner of teaching cattle, or any other animal—biped or quadruped—is to train them when young. Take them in the bud, when you can handle and control them easily, and before they have grown up wild and strong, without any discipline or restraint. *Train them when young*, should be the motto in every stable and barn-yard.

"In training animals, whether young or old, there is another requisite to be attended to beside discretion of management, and common sense, is the teacher. This is to have the right kind of harness * * *. The saddle of the yoke should be adapted to the length and breadth of the neck on which it rests, so as to render it easy to the wearer. Not too narrow, lest it cut in—not too wide, lest it gall the neck at its insertion in the shoulders. It should not be too short, lest it should induce them to haul apart, in order not to step on each other—nor too long, lest in winter

it should induce them to crowd in order to keep the track—not too narrow in depth through the ring and staple, lest it pull down on the top of the neck too much—nor too wide, lest it should have the reverse operation and cause the lower part of the bows to press too hard and gall the neck or throat in that part."

Judging the Age of Poultry.

Few housekeepers, and few cooks, are as good judges of the age of poultry as they ought to be. We all know, when poultry comes upon the table, whether it is tender or tough; and there should be no difficulty in knowing just as certainly whether a chicken, duck, goose or turkey is old or young when it is offered for sale. Now, the following is offered as a rule by which poultry can be safely judged, which, if read over a few times, and then laid away for reference when needed, no person need purchase old, tough poultry, unless from choice. If a hen's spur is hard, and the scales on the legs rough, she is old whether you see her head or not; but the head will corroborate your observation. If the bill is so stiff that you cannot bend it down, and the comb thick and rough, leave her, no matter how fat and plump, for some less particular. A young hen has only the rudiments of spurs; the scales on the legs smooth, glossy and-colored, whatever the color may be; the claws tender and short, the nails sharp, the under bill soft, and comb thin and smooth. An old hen-turkey has rough scales on the legs, callosities on the soles of the feet, and long, strong claws; a young one the reverse of all these marks. When the feathers are on an old turkey-cock, he has a long tuft or beard, a young one but a sprouting one; and when they are off the smooth scales on the leg decide the point, beside the difference in size of the wattles of the neck and in elastic shoots upon the nose. An old goose, when alive, is known by the rough legs, the strength of the wings, particularly at the pinions, the thickness and strength of the bill, and fineness of their feathers; and, when plucked by the legs, the tenderness of the skin under the wings, by the pinions and the coarseness of the skin. Ducks are distinguished by the same means, but there is this difference, that a duckling's bill is much longer in proportion to the breadth of its head than the old duck. A young pigeon is discovered by its colors, smooth scales, tender, collapsed feet, and the yellow long down interspersed among its feathers. A pigeon that can fly has always red-colored legs and no down, and is then too old for use.

Year unfavorable reports of the potato crop in Ireland have come to hand.

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The Horse of Col. Jeffords.

George B. McClellan is the honorary cognomen by which the late Col. H. H. Jeffords distinguished his famous charger.

He is now owned by the father of his late owner, who resides near the village of Dexter, Washenaw county, Mich., and is a perfect beauty of a horse.

Had George been the original of that masterpiece of art (valued at \$30,000) now on exhibition under the central dome of the capitol at Washington, by which the celebrated Kentuckian represents the gallant old hero Lieutenant General Scott, seated on his favorite war-horse, in full military trappings, we should think the artist a master in his profession.

The horse that bears this strategic name, was sired by Sir Henry, that contested the course with the Eclipse a few years since, and proudly bore off a prize of \$20,000, thus saving his fortunate owner the handsome sum of \$40,000. Good for George's father. And we should not be surprised if George himself should prove a source of equal profit to some lucky sportsman who may be fortunate enough to become his future owner.

George was the favorite steed for saddle or harness of a wealthy lady of Virginia, from whom he was purchased by the 4th Mich. Infantry, for a large sum, and presented to the young Col. H. H. Jeffords, as a token of their kind appreciation of their gallant leader.

Once the speed of George was tried against the best that one of our noble brigades could turn out, and George proudly returned to his constituency with a prize of \$200.

But his master was not a sportsman,—he was a Christian patriot, who fell in his country's defense, and now his spirit reposes where rebels and traitors never more disturb, and the young spirited son of Sir Henry still lives and snuffs the battle from afar as if in the exuberance of patriotism he is impatient to mingle in scenes more stirring than a quiet farm life, and if possible to avenge the death of his own gallant rider.

At the Washtenaw County Fair George was the favorite, and took the prize, as a gentleman's saddle horse, against his successful competition at the State Fair at Kalamazoo. Always ahead.—*Pentstemonian Courier.*

Cabbage, turnips, beets and carrots should be secured as soon as practicable after the first of November. Parsnips may remain in the ground till spring, if store-room is not at disposal for them. If left in the ground till spring, they should be dug as soon as the ground thaws, to prevent the tops from starting, which injures the roots.

METEOROLOGY.

(Continued)

A fourth point of which we shall speak is the *Radiation of heat from the earth.* A ray is a line of light or heat issuing from a body. Radiation is the act of issuing, or sending out lines of light or heat. We have already said that heat, always and everywhere, tends to diffuse itself equally and that it does this by radiation. Our readers will recollect that we illustrated this by reference to two pieces of ice of different temperatures.

In summer, the earth's surface becomes heated by absorbing the sun's rays. But after sunset, the air rapidly cools, and the earth radiates its heat into the atmosphere. If there are no circumstances to interrupt this radiation, it goes steadily on through the night, and the coldest hour of the night is the last one. At such a time the mercury will be found to sink gradually until sunrise. In order that this radiation may go on without interruption, it is necessary.

1. That the sky should be clear. Clouds receive the heat, radiated from the earth, and radiate it back again to the earth. A thick covering of clouds operates to keep the earth warm much on the same principle that a good bed blanket adds to your comfort, in a cold night. If you examine a thermometer on a clear, still night, you will find the mercury going steadily downward. If, after some time, the sky becomes overcast with clouds, the mercury will cease falling, and begin to rise. If after a time, it clears away again, the downward tendency will be again shown. If the wind should arise from a warm quarter, this will of course interrupt the experiment. A similar effect on a smaller scale, is produced by minor obstructions to radiation. The foliage of a tree will sometimes so interrupt radiation, that plants growing immediately under it will escape frost when others around are killed.

It is necessary that the air should be still. Every agitation of the air interrupts the radiation and thus retards the cooling of the earth's surface. It will be understood, then, that our clear still nights are the coldest, in summer or winter. Every man's observation will attest and prove this. Those nights in spring or fall, when most danger is to be apprehended, from frost, are the nights following a rain storm, when it clears away, with a pure, serene air, clear as crystal, with a northerly wind. The wind goes down with the sun, the stars sparkle through the transparent atmosphere, like a million of diamonds in a setting of amethyst, and the earth radiates its heat rapidly into the cloudless sky. Then cover your tender vegetables for there will be a frost unless the wind springs up from a warm quarter. Cart your loose chips into the garden, and make as many smudges as possible. Do everything in your power to obscure the clearness of the atmosphere—for whatever does this interrupts the radiation. If you could by any means cover your garden or cornfield with a dense smoke or fog till after sunrise, you would probably escape the danger. At such a time, a thermometer lying on the ground will show a much lower temperature than one hanging up several feet high. If you have noticed a thermometer hanging 5 or 6 feet from the ground on a frosty morning, you have been sometimes surprised that there should be a frost, when the mercury was several degrees above the freezing heat.

Thus, when the air is clear, the earth's surface becomes cooled by radiation below the temperature of the stratum of air lying immediately upon it. This stratum of air, having been heated during the day, and thus its capacity for moisture increased, has now more moisture than it contained as it becomes cool by contact with the cooler surface of the earth. By this cooling, the moisture becomes condensed, and is deposited in drops of dew upon the earth's surface and the vegetation that covers it. Hence also the low strips of fog sometimes seen lying along just above the surface, in evening or early morning. That stratum of air was heated during the day, and could of course contain a large amount of moisture in an invisible state. But being cooled down at night, it can no longer contain that moisture, which is therefore condensed in the form of fog. Frost is simply frozen dew, and occurs, as before intimated, whenever radiation reduces the temperature of the earth's surface below the freezing point.

We shall next consider "the relative temperature of land and water, and the influence of bodies of water upon the temperature of the adjacent country."—*Grand Haven Union.*

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Chap

A PROSPEROUS BUSINESS.—The Oakland County Farmer's Mutual Insurance Company, which has been doing business but a little over year, has issued 1,112 policies of insurance, covering an amount of over one million of dollars, while their losses thus far have been but \$300. There is no safer company for the farmer to insure in than the Oakland as the facts show. *A GOOD*

FINE WOOL.—The Wool business has been not only profitable, but creditable to the farmers of Genesee, this year. Most of our largest wool growers did not part with their clips at the usual season for buying, and found their advantage in holding on. We lately saw a lot in the storehouse of Beecher & Morrison—some 30,000 lbs.—all of it the nicest quality, and handled in the cleanest and neatest manner, of any we have ever seen, in equal quantity. Experienced wool buyers have expressed the opinion that the same amount of wool could not be found, to excel this lot, in any County of the State. The wool we speak of, was purchased by Messrs. Beecher & Morrison, from the growers, at 75 cents—proving sheep to be a very paying investment, in the property of the farm. *—Flint Citizen.*

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DETROIT MARKET PRICES,

Ending November, 21st, 1863.

Carefully corrected just before going to press, by

C. L. CROSBY & CO.,

Commission Merchants and Dealers in Fruits, and Western Produce generally, No. 109, Woodward Avenue, Detroit, Mich.

White Wheat	per bush.	fair prices unchanged	\$ 1 45	1 50
Red Wheat	do do	do do	1 25	1 28
Corn, Shelled	do do do	do do	0 90	0 95
do in the ear	do do do	do do	0 80	0 85
Oats	do do	advanced and steady	0 62	0 64
Rye	do do	nothing doing	0 90	0 92
Barley, new	per cw	unchanged	2 87	2 90
Potatoes, Neshannocks	per bu.	quiet and steady	0 55	0 60
do common	do	fair demand	0 50	0 55
Apples, per bbl. winter fruit	do	dull and nominal	1 24	1 75
do dried	per bush.	firm & steady demand	1 25	1 80
Seed, clover	do do	none offering	5 50	6 50
do timothy	do do	unchanged	2 00	2 25
Beans	do do	active and firm	2 10	2 20
Onions	do do	advanced but quiet	1 25	1 27
Turnips	do do	unchanged but dull	0 30	0 35
Butter, fresh roll	per lb	in fair supply	3 50	4 00
do Brin	do do	heavy and dull	0 19	0 20
do Brin	do do	do do	0 18	0 19
Veal	do do	in limited supply	0 85	0 90
Eggs	per doz.	advanced and scarce	0 20	0 21
Pork, best dressed	per cw	good demand	0 50	0 55
do do	per bbl	fair demand & firm	11 00	12 50
Beef, best dressed	per cw	declined	4 00	5 50
Mutton, dressed	per lb.	advanced to	0 06	0 07
do live	do do	advanced to	0 05	0 08
Hides, green	do do	active demand	0 75	0 80
do dry	do do	do do	0 15	0 16
do green calf	do do	do do	0 18	0 18
do dry do	do do	advancing	0 25	0 30
Sheep Skins each	do do	declined	2 00	2 50
Wool fine grade	per lb	more active and firm	3 00	3 75
Canada coarse clean fleeces	do do	do do	0 55	0 65
Chickens dressed	per pair	steady	0 85	0 49
do live	per pair	do do	0 00	0 30
Hay ton new and old	do do	advanced & steady	16 00	16 50
Cheese	per lb	steady and firm	0 10	0 14
Corn Meal	per cw.	fair demand	1 20	1 25
Coarse middlings	do do	advanced and firm	17 00	18 00
Salt	per bbl.	advanced and firm	2 75	2 90
Flour	do do	quiet and unchanged	6 50	7 50
do buck wheat	per cw.	scarce and nominal	4 00	4 50
Lard	per lb	declined and quiet	0 80	0 03

WOOD Active—Good Hickory, \$4.50 a 5.00. Beech and Maple \$4.00 a 5.00; mixed Wood Beech, Ash, &c., at \$3.50 a 4.00. Green ranges from 20 to 30 cents lower than well-seasoned or dry. Trade brisk and much arriving on vessels.

NEW YORK MARKET.

Compiled for the Farmer from the latest New York advices to the date of going to Press.

FLOUR—Has made another advance since our October issue and now ranges for Ohio round hoop \$2 25 @ 1 40; Western extra \$7 40 @ \$10, and \$11 @ 11 50 for western brands. Increase of \$1 00 @ 1 50 since October.

WHEAT—Fine, especially Western Red. Sales include 27,000 bush. Amber Spring, \$1 45 @ 1 46; 18,500 bush. prime Red Ohio, \$1 55; 9,500 bush. Amber Michigan, in store, \$1 43 a \$1 60; 6,000 bush. fair White Michigan, \$1 75; 7,000 bush. old Spring, \$1 30; 7,000 quab. old Red Winter, \$1 25. We quote: Spring, new, \$1 40 @ 1 47; Red Winter, \$1 42 @ 1 55; Amber Michigan, \$1 55 @ 1 60; White, \$1 70 @ 1 85. An advance of 15a 20c per bushel since our last.

CORN—Firm. Several loads of Western mixed in store and afloat, sold at \$1 10, and afterwards there were two or three loads sold at \$1 10 @ 1 11, in store and one of Western Yellow at \$1 12 in store. Rye was quiet at \$1 20 @ 1 23; a rise of 10a 15c since our October issue.

OATS—Firm. Canada, \$2 @ 2 25; State and Western, 18c 20c. Little change, 1a 2c better.

PORK—Dull and heavy. Sales 700 bbls. at \$15 15 @ \$18 25 for new Mess, \$16 50 for old do., and \$11 75 @ 12 25 for prime Mess, yet a good advance has been obtained of 60c @ 1 50 per bl.

LARD—Decidedly firmer, with more activity at \$1 12 @ 1 25; and sales for January, sellers' option, have been made at 12c. or prime, 2c advance.

DRESSED HOGS—Scarce, and firm at 7a 8c 3a.

BEEF—Firm, with a fair demand. Sales 500 at \$3 15 a 5 for country Prime, \$2 57 for country Mess, \$1 12 @ 1 20 for re-picked Mess, and \$1 24 @ 1 50 for extra. Tierce Beef good demand at \$2 25 @ 2 28 for Western.

BUTTER—In demand at 19c @ 22 1/2c for Ohio, and 22a 7c for Sta v. Michigan in good shipping order, firings, 20a 22c per lb. 2a 5c advance.

CHEESE—Firm. Ohio, 12c @ 14; State, 13c @ 15 1/2c.

BEANS—Have a fair demand. The receipts have been ample in bulk, but the larger portion is below fair quality, and for prime lots. Quotations: \$2 70 @ 2 85 for Marrowfat; prime Kidney, \$2 80 @ 3 20; and \$2 65 @ 2 75 for prime medium; mixed lots of Beans, \$2 45 @ 2 55; Pea Beans, \$2 70 @ 2 75 per bushel; advanced 1a 10c.

DETROIT NURSERY AND GREEN HOUSE.

WE have a large stock of FRUIT TREES of all descriptions, and can supply those who wish with trees of extra size. Also ORNAMENTAL Trees and Shrubbery of all kinds and sizes. A large assortment of EVERGREEN TREES of all the hardy varieties. Hybrid, Perpetual, Ever-blooming and Climbing ROSES, &c.

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Concord, Hartford Prolific, Javeling, Elsingsburg, Logan, Union Village, Allen's Hybrids, Taylor, or Bullet, Hyde's Eliza, Diana, Northern Muscadine, To-Kalon, Isabella, Catawba, and many others in cultivation.

FOREIGN VARIETIES OF GRAPES,

Currants, Gooseberries, Raspberries, Blackberries. **Triumph d' Gand & Wilson's Albany Strawberry Plants.**

Houghton's Seedling Gooseberry, the only kind perfectly free from mildew. Hardy Herbaceous Perennial Flowering Plants, BULBS of all kinds, &c., and a general assortment of

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Our trees and plants are all in good condition, and we will sell them in large or small quantities on as liberal terms as any nursery of established reputation in the country.

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PATENT FOR THE GUIDE APPLIED FOR.

Come and buy you a good wood sawing machine that will save you more hard work than anything else you can buy for the money. They are simple and cheap—costing

Only \$100 for a good horse power and machine.

Ready to saw, with saw guide to steady the saw when entering the Log, and when out so that you do not have to stop the motion of the team, to roll up the Log and start the saw in, and everything complete, that can be worked with two or four horses, and saw twenty-five or thirty cords a day.

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BREEDING, MANAGEMENT, AND DISEASES OF SHEEP.

By Hon. HENRY S. RANDALL, LL. D., Author of "Sheep Husbandry in the South," "Fine-Wool Husbandry," &c.

This work has been delayed, but is now completed, and ready for delivery to Consulting Agents, and persons ordering it by mail.

GOOD AGENTS WANTED

To sell the work in every Wool-Growing County in the Loyal States, Canada, &c. For Terms, which are liberal, apply to the publisher.

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An improvement over all others now in use.

SIMPLE, CHEAP AND DURABLE,

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THE subscriber has for sale several South Down Yearlings and Buck Lambs. The yearlings are by *Tetherley 3d Yearling*, imported by Mr. Morris of Mountfordham. The Buck Lambs are by *Young York*, grandsire *York*, also imported by Mr. Morris.

Also, several pairs of Suffolk Pigs, from Stickney's Importation. The above stock is at the *Spring Brook Farm*, near the village of Farmington, Oakland county.

Address, F. E. ELDRIDGE,
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Teeth filled with Crystal Gold, Stannic Iodide or Cement. Teeth inserted on Pivots or set in on Plate of any kind that may be desired, either in full or in partial sets. All business in his line will be executed in a neat and satisfactory manner, and upon the most approved methods.

Premium taken at the State Fair of 1863.

Strawberry Plants.

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TO FARMERS AND STOCK BREEDERS

ALL HAIL THE TRIUMPH THAT

Fickardt's Cattle Powder



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ACHIEVED!!

THOUSANDS ARE TESTIFYING TO ITS EFFICACY!

"The merciful Man is kind to his Beast."

AFTER years of study and experiment by the inventor to compound from pure Vegetable materials a Powder that should and must take the place of the thousand and one nostrums gotten up and palmed upon the public as "certain remedies" for the cure of all diseases which the brute creation are "heir to," he has produced the one heading this advertisement, and none can be genuine unless bearing our FAC SIMILE signature. The demand has been such that its sale has been chiefly confined to the State of Pennsylvania, but we have now consummated such arrangements that we are prepared to supply the numerous orders now on hand, as well as those we may hereafter receive from other States of the Union.

Knowing this Powder to possess all the curative properties here set forth we deem a fulsome tirade of words unnecessary, relying assured that its own merits will secure for it a ready sale. Being composed of pure vegetable ingredients, it can be safely and judiciously given to that noble animal the HORSE. Its effects are no false puffing of the system, creating a bloated carcass with a premature shedding of the hair; but on the other hand, it strengthens the digestion, purifies the blood, regulates the urinary organs, thereby improving and protecting the whole physical condition of the animal even when in an apparently healthy state.

To the agriculturist and Dairyman it is an invaluable remedy for their NEAT CATTLE laboring under HOOF diseases, HOLLOW HORN, and other of the many complaints to which they are liable from a suppression of the natural secretions.

MILK COWS are much benefited by occasionally mixing with their slop or feed—it has a tendency to strengthen the animal, remove all obstructions from the milk tubes, promote all the secretions, and consequently adding much the health of the animal, and quantity and quality to the Milk, Cream & Butter. HOGS, during the warm weather are constantly overheating themselves, which results in their getting Coughs, Ulcers of the LUNGS and other parts, which has a natural tendency to retard their growth. In all such cases a teaspoonful mixed in a bucket of feed and given every other day will speedily remove all difficulties, and the animal will soon increase in both health and FAT.

TESTIMONIALS.

WASHINGTON, Jan. 7, 1863.

To William Ralston:

I have used your Cattle Powder, and would state that it possesses the qualities of toning and renovating the stomach, removing in some morbid matter. I can recommend it for all horses in private use, where the system is not so much debilitated.

J. P. TURNER, Veterinary Surgeon,

For the United States Government,

Washington, D. C.

WASHINGTON Oct. 16, 1862.

Wm. Ralston:

Dear Sir—Having tried the Cattle Powder, manufactured by you, I consider it a good article for the diseases of Horses, and as a preparation as there is in the market.

HIRAM WRIGHT, Asst. Veterinary Surgeon,

For the United States Government.

WASHINGTON, Oct. 21st, 1862.

Wm. Ralston:

Dear Sir—Having had your Horse and Cattle Powder in use for some time, I most cheerfully recommend it as a good article and well worthy of public notice.

M. JACKSON,

Superintendent of the Mule Corral.

Wm. Ralston:

We have tried the Horse Powder manufactured by you, in the Corral and Hospital stables to some extent. It is highly recommended to me by the Superintendent and Veterinary Surgeon in charge.

C. M. SNOW, Gen'l Sup't.,

Asst. Quartermaster's Office, cor. G and 22d st.

Washington D. C.

ELSON, Baltimore Co., Md., May 20th, 1863.

The undersigned, for some time past, has had in use on his farm, "Fickardt's Cattle Powder," and from the beneficial effects derived from it, takes pleasure in recommending the article to all Farmers, as a valuable preparation, to be given to Horses and Cattle. Some of my best work horses, that were

in bad health, with little or no disposition for food, on their taking "Fickardt's Cattle Powder," soon recovered their appetite, and in a short time became fat and in a short time became fat and in good condition.

HENRY B. CHEW,

PHILADELPHIA, May 15, 1865.

Wm. Ralston, Esq.:

Dear Sir—It is with pleasure that I certify to the invaluable properties of your Cattle Powder. I have been using it for nearly eight months. In last June I was traveling, my horse became very sick, so bad that I had to return home, and apply to a Farrier. It was nearly 6 months before he was fit to use, he being in such a low condition. I happened to stop in at Mr. W. White's, and saw your Cattle Powder. I made up my mind to try a package, and after using two of them, it was surprising to every one who saw the horse, to see how much he had improved in flesh and spirit. Those who had seen him before he became sick could scarcely believe him to be same. I also recommend the Powder as being a fine thing for the urine, and also to improve the coat, as it gives it a fine, silky appearance. My friends seeing the advantage of it, have commenced using it among their Cattle. No person should be without in their stables. I have seen it fully tested, and consider it one of the best articles in use.

Yours very respectfully,

GEORGE SNYDER.

We, the undersigned, have used your Powder, at the request of our friend, George Snyder, and find it very useful among our cattle.

PETER OTT,

JACOB OTT,

J. G. KEISS,

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New York State Fairs of 1860 and 1862,

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COMBINED THRESHERS AND CLEANERS

Threshers, Separators, Wood Saws, &c.

ALL OF THE BEST IN MARKET!

These Powers produce more power, with less elevation, and are operated with greater ease to the team than any other, requiring very slow travel of Horses, being only about 15 miles per hour when doing a good fair business, which is about 300 to 500 bushels of oats per day, or half that quantity of Wheat or Rye.

The Thresher and Cleaner runs still and easy, separates the grain perfectly clean from the straw, cleans quite equal to the best Fanning Mills leaving the grain fit for mill or market, and is capable of doing a larger business without waste or clogging than any other Two Horse Cleaner before the public.

For price and description send for Circular, and satisfy yourself before purchasing. Address

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COLEBURN, Schenck Co., N. Y.

We have received *Today's Lady Book*, *Arthur's Home Magazine*, *Frank Leslie's* and the *Atlantic Monthly* for August and November, they are teeming with variety. For sale by Roy, Newsdealer.

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To be sent in time for SPRING Planting, with instructions as to Soil, &c.

Largest Number of Plants ever offered for One Subscriber!

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One of the newest, best, earliest, hardiest and most productive known in Grape Culture. This variety is one of the finest flavor for table use, and should be in every man's garden. We will send them by mail at the proper season. Try and secure one, as there are very few true Delaware Grapes in Michigan. Or Two of the fine, large, hardy CONCORD GRAPE VINES.

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Is also offered as a Premium for the First Fifty New Subscribers. This most wonderful piece of mechanism will knit Silk, Cotton, Worsted or Woollen Scarfs, Clouds, or Stockings in the most even and beautiful style, (in any or all colors,) and superior to any hand work. It runs

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We have done this with the Machine now on exhibition in the Michigan Farmer office, which we offer as a Premium. The first Fifty new \$1 subscribers takes this useful Household Prize.

It will easily KNIT FORTY PAIR OF STOCKINGS PER DAY!!

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"LIEBIG'S NATURAL LAWS OF HUSBANDRY," or "THE PRACTICAL SHEPHERD,"

The first is one of the most thorough works upon Agriculture ever produced in any language, Liebig as a scientific man has a world-reknown; the other by Randall, is the best work ever published on Sheep, in the U. States. They should be in the hands of every Farmer in Michigan.

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DETROIT, November, 1863.